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CHAPEL



THE
GARDENER'S MONTHLY

AND

HORTICULTURIST.

DEVOTED TO

HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

EDITED BY

THOMAS MEEHAN,

STATE BOTANIST OF PENNSYLVANIA,

FORMERLY HEAD GARDENER TO CALEB COPE, ESQ., AT SPRINGBROOK, AND AT THE BARTRAM BOTANIC
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"AMERICAN HAND-BOOK OF ORNAMENTAL TREES," ETC.

VOLUME XX, 1878.

PHILADELPHIA:
CHARLES H. MAROT, PUBLISHER,
No. 814 CHESTNUT STREET,
1878.

ILLUSTRATIONS.

CHAPEL

Frontispiece—Chronio.....	ANDROMEDA ARBOREA
A	
Abutilon roseiflorum.....	334
Acalypha macrophylla.....	304
Adiantum princeps.....	235
Anthurium ornatum.....	268
Apple, Ohio.....	151
“ Oregon Crab, Pyrus rivularis.....	151
Artificial Wood Tiles—four cuts.....	330
B	
Bedding Plants, Arrangement of—three cuts.....	34
Begonia achrne.....	60
“ kallista	61
Blanching Celery.....	239
Blandifolia princeps.....	10
C	
Carpet, Bedding—six cuts.....	98-99
“ “ —five cuts.....	130-131
Centaurea Clematii.....	75
Coleus pictus.....	44
Croton Disraeli.....	363
Cycas Normanbyana.....	108
E	
English Daisy.....	134
F	
Feast, John, Portrait of.....	317
G	
Glass Panels—six cuts.....	298-299
M	
Mennonite Grass-burner.....	172
“ “ End View.....	173
“ “ Ground Plan.....	173
O	
Odontoglossum crispum.....	12
R	
Ribbon Bedding—three cuts.....	66-67
“ “ “	163
Rustic Summer House.....	34
S	
Selaginella Japonica.....	262
T	
Tropæolum Lobbianum hyperburi.....	5
Turnip, Yellow Mont Magny.....	209
W	
Wahlenbergia tuberosa.....	198
Window-box Ornaments—seven cuts.....	265-266
Window-hood for Ornamental Vines.....	325

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Edited by THOMAS MEEHAN.

Vol. XX.

JANUARY, 1878.

Number 229.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

An American garden is not particularly attractive in Winter time, but there is no reason why it should not be so; and when the time comes, which we look forward to, when there shall be a distinctively American style of gardening, much more attention will be given to it than there is now. In our text books of landscape gardening the great anxiety is to bring out the lights and shadows as cast by the umbrageous foliage of masses of trees or of fine specimens. The contrasts of brown and grey of the ground with sunny leaves of the trees, the due proportion of earth, or sky, or water, the periods of blooming of trees and flowers, or the tints of color in which Nature clothes herself all about us—these are the chief concern of the landscape gardener of the books. To him there is no Winter garden except such as he makes under glass. Winter in the open air is a *dies non* in the calendar of his art. Give us, he says, "earth, and air, and water, and sky," and he will give you the perfect garden. The fact is, that in those parts of the world where our great lights in landscape gardening flourished, the Winter is no time for open air enjoyment. The days are dark, the nights are long, and the chief pleasures must necessarily be in the light of the hearth, and in the social festivities of drawing-room life. Our clear, bright skies and long Winter days, cold though they be, are still favorable to the

enjoyment of beautiful landscape scenery. Indeed, there are few things more pleasant than a beautiful landscape as seen from an American window on a Winter's day. It may be but a mass of oaks with their sturdy branches braving the fury of a north-west storm; or it may be the waving of the hemlock in the breeze, as wave the ripples over a summer sea. At times there are the icicles swinging to and fro with the branches, reflecting the sun-light, or even the moon-light, and seeming, from our cosy observatories, as if nymphs and dryads, the elves and the fairies were about to get up an entertainment peculiarly their own, but of which we are favored with a private view. It is indeed almost impossible to look on an American winter scene at any time of the season, without seeing something to excite our admiration, or to lead us to an increased love of nature. Nothing of this is in our text books; but why cannot we see it without them, and improve it withal? Let every one as he reads this look out from his window and see how much there is to enjoy, and with a little study he will be able to plant or to arrange things that will give beauty where there are now none, or give new beauties to those which already exist.

In the matter of what he already has, he will want some practical hints as to something to do, for it is not thought that there is much to think about in a garden in January in our country. But this is all a mistake; there is plenty to do.

Pruning should be completed as soon as possible. Some judgment is required in pruning

flowering shrubs, roses, &c., although it is usual to act as if it were one of the most common-place operations. One of the most clumsy of the hands is commonly set with a shears, and he "goes through" the whole place, clipping off everything indiscriminately. Distinction should be made between those flowering shrubs that make a vigorous growth, and those which grow weakly; and between those which flower on the old wood of last year, and those which flower on the new growth of next season, as the effect of pruning is to force a strong and vigorous growth. Those specimens that already grow too strong to flower well, should be only lightly pruned; and, in the same individual, the weakest shoots should be cut-in more severely than the stronger ones. Some things, like the Mock Oranges, Lilacs and others, flower on the wood of last year. To prune these much now, therefore, destroys the flowering; while such as Altheas, which flower on the young wood, cannot be too severely cut-in, looking to that operation alone.

In pruning Roses, the fall-blooming kinds, which flower on the new growth, may be pruned as severely as we wish; in fact, the "harder" they are cut-in the better. In this class are the Noisette, Bourbon, Tea, China and Hybrid Perpetual and Perpetual Moss. Without considerable experience, it is difficult for the amateur to distinguish these classes. The best way to get over the difficulty is to obtain the catalogues of the principal rose-growers, in which each kind is usually classified. Amateurs should pay more attention to the scientific—if we may so term it—study of the Rose, and its classification and general management. No class of flowers is more easily understood, and no one affords so rich a fund of perpetual interest.

Hyacinths, or other hardy bulbous roots that may not have yet been planted, may still be put in where the ground continues open. The beds of all such bulbs should be slightly protected with manure or litter, and be carefully watched for mice and vermin, which are likely to avail themselves of the shelter and feed on the roots.

Lawns that are impoverished by several seasons' mowing, will be improved by a good top-dressing. This may be applied any time after the leaves are gathered up, and before the snow falls. Soot, wood-ashes, guano, or any prepared manure, is best for this purpose. Barnyard manure is objectionable, as generally containing many seeds of weeds.

Evergreens set out last Fall in windy or ex-

posed situations, will be benefited by a shelter of cedar branches, corn stalks, or mats, set against them. Whether hardy or tender, all will be benefited thereby.

Hedges that have not had their winter dressing, should be attended to. If the remarks we have before made on hedges have been attended to through the Summer, there will be very little now to do. We have said that pruning in Summer weakens a plant, while pruning in Winter strengthens it; and so, as hedges naturally get spoiled by growing vigorously at the top, and weakly at the sides, they should be severely Summer-pruned at the apex, and Winter-pruned near the base. Now will be the time to see to the latter, taking care not to make it too narrow. A good hedge should be nearly four feet wide at the base, and be cut into a point at the top.

Manure for flower-beds, borders, etc., may be hauled convenient to where it is likely to be wanted in Spring; many spread it on at once; but if the soil is frozen very thick, it prevents the early thawing of the soil in the Spring, and so no time is gained.

Very small plants in borders or on the lawn, or larger plants that may have been set out the past season, should be mulched with anything that will prevent the ground thawing, and so, the plant "drawing out." Most readers have done this in the Fall, but there is good to be done by it yet by those who have neglected it till now. Keep a sharp look-out for mice under the litter, however, where it is wise from the value of the specimen to run no risk; brown paper, afterwards tarred, may be wrapped around the stems as far as the litter covers them.

A great deal of trenching and sub-soiling can be done through the Winter if manure be thrown over the surface before it is frozen too deep; a little snow even, dug in, will not injure the operation, as we find in our own experience.

COMMUNICATIONS.

TUBEROUS ROOTED BECONIAS.

BY W. FALCONER, CAMBRIDGE, MASS.

On page 327 of the November MONTHLY, "W., Norfolk, Va.," with reference to the above, says: "As far as tested, they are most suitable for bedding plants, surpassing the geranium in their beautiful foliage and large flowers of richest hues, and will soon become a great acquisition to the garden and lawn. In England they have

already superseded it to a great extent, being more vigorous and floriferous." Now, this is direct contradiction to my experience. As greenhouse plants they are magnificent, but in the flower garden my own practical experience and that of my neighbors emphatically testify that tuberous-rooted begonias are utterly worthless. We can do something with the *Rex* and *fuchsoides* sections, but *Bolivianenses* and *Veitchii* must stride miraculously ere "General Grant" need hide his face. If "W." means that these begonias have, to a great extent, superceded geraniums in English flower gardens, his statement will be absolutely wrong. I have tried them there myself and seen them tried by others; but our attempts were fruitless. The plants would grow moderately and bloom a little, but in no way sufficient to compensate for the care and space devoted to them, as compared with results from other subjects. Their notoriety for outdoor gardening in England originated at Veitch's nurseries, London, where these begonias were planted in the flower garden—sheltered on every side by ranges of greenhouses—and where, on a little rock-work, I know the tubers to have survived the Winter. In that flower garden, time and again, I have seen these begonias, in moderately fair condition, I admit, but in no way surprisingly excellent.

DISEASE ON THE MARECHAL NEIL ROSE AND EUONYMUS LATIFOLIUS.

BY W., NORFOLK, VA.

I notice in the November number of the MONTHLY a complaint from a Philadelphia correspondent of a new disease which has of late attacked that queen of climbing roses the "Marechal Neil," and that you express surprise thereat and ask for the expression of your readers regarding it.

I fear you will receive similar discouraging reports from this latitude also; but whether the actual cause has been ascertained or not, I am not informed. My own opinion is, that the severity of our climate is the only assignable cause, and that this rose is more delicate than others of its class. I judge this to be so from the fact that it flourishes most luxuriantly in Florida, and we hear nothing of the disease affecting it there; and from the manner in which the disease attacks the stem here. The bark, for about one-third of the circumference, and with it the wood extending to the heart, seems to die as with blight or frost, of course sapping the life of the tree. It is, however, a lingering

death, for the uninjured wood struggles manfully and often nearly surrounds the dead with a new growth, but only to prolong its uncertain existence, for the fatal wound is never fully healed. There may also be the knotty excrescence of which your correspondent speaks. This applies to *old* bushes only, the young and newly imported trees, chiefly on grafted or budded stocks, as yet show no signs of disease, and were more beautiful than ever this Autumn, with their immense flowers. But there are many old and very large bushes here, and the complaint is general that they are dying, no remedy having been found efficacious. Many roses, the "Chromatella," for instance, will outlive such an injury, and new wood will soon cover the old scar and the bush become as vigorous as ever. Not so with our favorite. Another disease which has not yet attacked the rose to any extent, though I have noticed it slightly upon a large and thrifty "Lamarque," has killed the beautiful evergreen *Euonymus latifolius*. Nearly all are dead, and the few remaining in the city are fast yielding up the ghost. No remedy for this has been discovered. It is a species of the bark-lice family, perhaps the same that attacked the orange in Florida several years ago, and unlike that pest of the apple tree, but one which I have never seen until the past year. Whale oil soap and whitewash have no effect upon it. Cannot some of your correspondents give some information with regard to this pest, or how we may exterminate it? I noticed yesterday, in a new cemetery near the city, but one large bush killed by this disease; the other and younger ones had thus far escaped, but their time will shortly come.

THE AILANTHUS.

BY GEN. W. H. NOBLE, BRIDGEPORT, CONN.

It's a great comfort to have started a new interest in anything that grows. My plea for the *Ailanthus* seems to have done for it and your readers some good. I am not a botanist, only a lover of nature and of her products. I have for many years wondered why that beauty of the *Ailanthus*, which I have noted in your journal, had not won for it some respite of the much cursing which it has endured. And now it comes out in your September number that it is diæcious. The nauseating smell, it seems, belongs only to the separate estate of its masculine gender. The lovely seed plumes, whose bright tinted masses

in autumnal garb I have so much admired, we are told belong solely to the feminine branch of the family.

Now, I confess, I had suspected this. But the books at my command said nothing about this separate sexual habitation of the *Ailanthus*. So, for fear my ignorance would be taken to task, and learned quotations thrust at my suspicion of these separate connubial dwellings, I kept up a respectful and watchful silence.

Some of those nearly mid-August *Ailanthus* plumes I have sent to Mr. Veitch, of New Haven, and to J. Stauffer, of Lancaster, Pa., both of whom have obliged us all with desired notice and information. To the latter and to your readers I would say, that my "*Ailanthus boquet*" is not that of the *Staghorn* sumach.

The *Ailanthus* variety, which I described, grows to forty or fifty feet in height, and becomes quite a large tree. I think the most brilliant specimens grow in a rather shallow and sandy soil, thus maturing rather earlier, and like other trees so stationed, taking on sooner a more brilliant tinge. One of these "*towering bouquets*" is so fine an object by itself, and mingles so tastefully with either the Summer or Autumn tints of other trees, that its merits, habits and varieties, if any, should be well studied. We may thus very likely acquire a plant whose tint in leaf and seed plumes shall rival those of the new Japanese maples. Let's hear from other observers.

THE TUBEROSE.

BY W. C. L. DREW, EL DORADO, CAL.

The beautiful and delicate tuberose requires no encomiums from any pen; its popularity is insured forever. Other flowers may fade in the estimation of *Flora's* devotees, but the tuberose never.

As all amateurs know, a tuberose blooms but once; the bulb then gives birth to a number of small bulbs, which, with two years of good culture, will produce good flowering bulbs. A departure from this rule of blooming but once has very seldom been chronicled, and will be received with doubt by cultivators in general; but be this as it may, I would only give them my experience, and leave them to judge.

In May, 1876, I planted a number of tuberose bulbs from a well-known firm. These bulbs

all grew and flowered finely. After flowering I removed the bulbs and placed them in a box of fine loam, in which they remained until May, 1877, when they were set out in a corner of the garden for the small bulbs to perfect their growth. In July I noticed flower buds on one; in August it was in bloom. The last of September flower buds appeared on another; it is now over a foot high, with a number of buds ready to open. The old bulbs must have bloomed a second time, or the young bulbs, which were only an eighth of an inch in diameter, made a wonderful growth and bloomed in a single season. If the latter was the case, the old bulb decayed entirely; as on examination there were no signs of any but the one in bloom ever having existed. I did not remove the parent bulb in planting, but planted it surrounded as it was by four or five small bulbs. Can any one say whether the bloom was from the old bulb, or a young one of this season's growth?

EDITORIAL NOTES.

THE ORIENTAL PLANE.—Mr. Samuel Parsons gives a timely caution to planters to avoid the American and choose the Oriental Plane in planting. The Oriental seems free from any disease except a little trouble from a white mildew in the fall, which does not materially affect its beauty; while the American suffers terribly all over the United States in May by a fungus which destroys the young growth as completely as a hard frost would do. It pushes out a new growth, but the result is a crow's nest appearance, anything but agreeable.

When in Europe last year, the writer examined the trees planted in France and England so abundantly, and a similar disease seems by no means uncommon, but it is very trifling in its effects compared with the attacks here, and, we should judge, in that country it would make little difference which species is planted.

WEeping BLOOD-LEAVED BEECH.—The common Blood-leaved beech has a weeping habit when old, and people seeing this have propagated from it, believing it to be a real weeper. But the Belgian nurserymen insist that there is a veritable weeper, and that it originated in Flanders.

HYBRID TROPEOLUMS.—In very dry and hot seasons *Nasturtiums* are not as good as they might be, but in seasons such as the last, they are wonderfully beautiful objects. On the grounds of Washington Pastorius, Esq., of Ger-



mantown, last Autumn, we saw a specimen of the variety *T. Lobbianum hybridum*, (see cut) which attracted universal attention. If the roots are in a cool piece of ground, the plants themselves do not mind the Summer heat.

CUPRESSUS LAWSONIANA.—And now our old friend has fallen amongst the Philistines. It has been weighed in the nomenclatorial balance by the Horticultural Botanists of the Continent and found wanting. Hereafter our American friends who look for "all the new things" from Europe, had better hesitate when they come to the name of "*Chamaecyparvis Bourcierii*," unless they have room for an extra plant of *Cupressus Lawsoniana*.

CULTURE OF THE NATIVE WATER LILY.—We are glad to see that this beautiful plant is becoming a favorite with cultivators. A Western paper says:

"The cultivation of the Water Lily is an easy matter, and there is nothing that better repays culture than that. Mr. Brand has been successful in its culture for the last two years, thus demonstrating its suitableness to the climate. We published from the *Gardener's Monthly*, some weeks since, the method of growing this beautiful plant successfully."

As concerns aquatics, on the grounds of Mr. Ware, Tottenham, England, where recently we saw one of the best collections of hardy plants in the world, aquatics are grown by simply sinking tubs in the ground. The water seldom needs replenishing, as there is little evaporation under these circumstances.

HANDSOME LEAVED PEAR TREE.—The *Garden* says, that in England the leaves of the Doyenne Boussock pear tree turn to as beautiful color in the fall as those of the Virginia creeper.

HOETEIA JAPONICA, also *Spiræa japonica* and *Astilbe japonica* of our various catalogues, goes also as *Astilbe barbata* on the continent, and which is perhaps the correct name.

NEW OR RARE PLANTS.

ANDROMEDA JAPONICA.—With a beautiful colored plate the *London Garden* gives the following account:

Japan *Andromeda* (*Pieris japonica*) is a tall, smooth shrub, with pointed, lanceolate leaves about two inches long, which are serrated or waved at the margin, and narrowed at the base, and numerous drooping branched or paniced white, waxy flowers. It is a native of shrubby places in the mountainous region of Japan, where it was discovered by Thunberg, who figured and described it in his "*Flora Japonica*," t. 22 (published in 1784), and specimens from whom are in the British Museum Herbarium. A variety, having narrower leaves, occurs in a wild state, as well as one having the foliage margined with white. Although at present scarce, this most graceful plant bids fair to become a most useful addition to our stock of Spring-flowering shrubs; it is said to be even hardier than *A. floribunda* and is much more ornamental than that species. Our figure is from a plant that flowered in Messrs. Thibaut & Keteleer's nursery, at Sceaux, in March last. The living specimens from which the plate was made was sent by post from Paris to London, so that the artist did not see them in their best state. A more lovely shrub, when seen veiled over with pendent racemes of white waxy balls, it would be difficult to imagine, and we hope it may soon become frequent in gardens.

PICEA ACICULARIS.—Under this name a new Conifera from Japan is advertised in Belgian catalogues. The foliage is said to be of a very deep green, with a silvery reflection. It is said to be the most distinguished of the genus. By its appearance and in its sharp needles it approaches *P. polita*.

NEW RACE OF CHRYSANTHEMUMS.—The *Florist and Pomologist* tells us that a race blooming much earlier than the common kind has been obtained in France, and that many of the varieties are now offered in English catalogues.

SCRAPS AND QUERIES.

MOVING LARGE TREES.—“Carlos.”—“Can you give any idea how large it would be safe to move trees? We have some Norway Maples, a foot round, in the way of some improvements, which we do not wish to lose. If they can be moved, when and how?”

[It is hard to give an “idea” without seeing

the trees. So much of success depends on constitutional health and other circumstances. A moss-grown tree or one growing weakly would die if a “foot round;” while, if in vigorous health, it would make no difference if it be a foot thick, provided all the roots are obtained. To get all the roots you must dig in a circle, say for a tree the size of yours, six feet from the tree, making a circle twelve feet wide. Dig this ditch two feet deep, and then “undermine” the roots. You cannot carry a ball of earth twelve feet wide and two feet deep, except at an enormous expense; but you can get all the roots by this system, which is of more importance to the tree than all the earth. Spring will do for it in Brooklyn.—Ed. G. M.]

GREEN HOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

Flowers in Winter, flowers in Spring, Autumn flowers, all in turn bring their special pleasures; but the first get the heartiest welcome, and chiefly, we suppose, from the difficulty experienced in obtaining them. Yet it is not so difficult if one has plenty of sun-light. If the plants have any tendency whatever to bloom in Winter, sun-light will bring them on. Where windows or greenhouses be so that they can have every ray of sun, from early morning to noon at least, the houses or rooms may not have a high artificial temperature. A house at 45°, with plenty of sun-light, will have more flowers than one at 65° with the same sort of plants, and only general light, without the direct rays of the sun.

This will give a hint to all who are building greenhouses for Winter flowering, to have the roof-pitch very steep. It is almost impossible to get flowers of any consequence in Winter from a very flat-pitched house.

We note, with much interest, the increase of these grateful winter pleasures; but they are not near as common as they might be, through a fear that the expense is more than can readily be borne. But this is generally through the proprietor himself not giving the matter much thought, but depending altogether on the carpenter. It is best always, in this matter to have the advice of an intelligent and experienced

gardener. Every twenty-five dollars invested in this way will save hundreds from the carpenter's bill. We note many places rendered worthless for a thousand dollars, which, with a proper understanding of the wants of plants, and proper arrangements, might have been made pleasant places for half that sum.

In the arrangement of plants in the greenhouse, continual change is commendable. Every few weeks the plants may be re-set, and the houses made to appear quite different. In the end where the lowest plants once were set, now the taller ones may be placed; here a convex group, and there presenting a concave appearance. Drooping plants on elevated shelves, and hanging baskets from the roof, make little paradises of variety in what were once unbearable monotony. Gardeners often wish to know the secret of maintaining a continued interest, on the part of their employers, in their handiwork, and this is one of the most potent—continued change and variety in the appearance of every thing. Beautiful flowers, graceful forms, elegant combinations, all developing themselves with a healthy luxuriousness and ever-changing endlessness, will wake up an interest in the most indifferent breast.

The temperature of the greenhouse at this season should be maintained at about 50°, allowing it rise 10° or 15° under the full sun, and sinking 10° or so in the night. Though many of our practical brethren differ from us, men, for

some of whose opinions we entertain the highest respect, we do not recommend a very great difference between night and day temperature; we think 10° ample allowance. It is following nature, no doubt; but we would rather strive to beat nature. She cannot make the specimens we do, nor flower them so beautifully or profusely, and in many other respects we think the practical gardener can much improve on her red-tape notions and old-fashioned courses.

The management of a greenhouse fire is worthy of a thought. Few of those who attend them know much about their proper management. In lighting a fire a good jack-knife and a piece of pine wood is as good as an armful of shavings. Shave the piece a little without taking the shavings wholly off. Start these with a match, and, being connected with the main piece, they will fire it. A few pieces crossed over this nucleus, and off the whole goes. This little hint will save considerable time in hunting paper and shavings, or straw. The fire lighted, it must be kept bright or dull according to the probable weather. To do this use wet ashes. If it is desired to keep a body of heat for a long time without burning away, proceed in this wise: Start the fire at noon, for instance, and get the coal thoroughly red hot. Then, say an hour after, put on a shovelful or two of fresh coal, and let it burn about *half* through. When it has done this, which will be towards evening, cover with three or four shovelfuls of wet ashes, leaving a very small opening through to the coal at the far end. If such a fire be properly made in this way, there will be little necessity to look at it again till next day at noon. Then throw a few shovelfuls of coal on the hot mass of ashes, doing no more than this for an hour or so. The coal by that time will be thoroughly warmed, and in that condition readily burns. It is worthy of remembrance at all times, that warm coal will ignite more rapidly than cold coal. Having warmed it on the hot ashes, we may now watch the weather. If we want to get up the fire in a hurry, we now rake out a little ashes from the bottom, so as to induce a little draft, and suffer the coal on the top to drop into the ashes. As soon as it begins to redden, we can rake it more if we want to hurry it, or less if we do not. Of course how much or how little of this raking or ash covering is to be done depends on the weather, the capacity of the furnace to heat the house, and lots of other little things. But one who understands this well will need no dampers

in the flues, no ash-pit door, nor any of the usual contrivances for regulating draft. It is surprising what a nice art "stoking" is. There is far more fun in this than playing base ball or the piano, and we are surprised at so few learning to do it well. Besides there is money in it, too. One who knows the art well will do as much with ten tons of coal as others will do with twenty, or even thirty.

COMMUNICATIONS.

DOUBLE GERANIUM, "BISHOP WOOD."

BY WM. K. HARRIS, PHILADELPHIA.

In your valuable MONTHLY of November edition, I notice an article with the above heading, by Mr. Woodruff. After reading it I feel called upon to reply. Geranium B. Wood I raised from seed three years ago last summer, being one of over four hundred seedlings. I don't think that Geranium Guillion Mangilli was thought of at that time. Mr. Woodruff does not inform us who claims the honor of raising G. Guillion Mangilli, nor does he take it into consideration whether it is above suspicion or not. Of course we are to take it for granted that all gardeners in Europe are honest, and all Yankee tricks must be played by Yankees. However, let that be as it may, the two geraniums are distinct, and it is a surprise to me that Mr. Woodruff was not able to see the difference.

B. Wood has large, smooth, round flowers, petals broad, of good substance; while G. M. has smaller flowers, petals long and narrow, edges inclined to fall back, trusses not so large, color very near the same. Probably it would be more interesting if I would change my subject a little. I have taken a good deal of interest in growing geraniums for more than ten years. Have kept pace with the importations, and have been the author of a number of good results. Asa Gray is one of the best to raise seed from, as it seeds very freely, and we may get almost any color that is among the single varieties by crossing any desired variety with Asa Gray. In proof of the above fact, I have tried it with wonderful success. The last good result was Jenny Read; I obtained it by crossing Asa Gray with Gaiety, which is a very dwarf, scarlet, and free-blooming variety. J. Read does not resemble Asa Gray in any particular, except in being double; it partakes of its male parent in color and free blooming

qualities, and more dwarf than either. One thought more, then I am done. Last winter there was a host of double white geraniums sent over from Europe, some of them not worth growing. Among them, however, there are three varieties, Venice, Adelaide Blanchard and Madame Emily Baltat, which are really good.

BISHOP WOOD GERANIUM.

BY JOHN DICK, PHILADELPHIA.

I notice the remarks of G. H. Woodruff in the last number of the GARDENER'S MONTHLY. I can vouch for the Geranium Bishop Wood being raised by W. K. Harris, having seen the first bloom standing very conspicuously amongst other seedlings; some two or three hundred in number. There must be a difference in the Geranium Guillon Mangellon, sent out by Messrs. Veitch and Bishop Wood; or Mr. Court representing Messrs. Veitch at the Centennial, and Mr. Outram, the representative of B. S. Williams of the Victoria Nursery, London, would not have ordered Bishop Wood, each of them sending home twelve plants of this American seedling.

For the information of those not having the two geraniums to compare, granting there is a similarity in color, the petals of Guillon and Mangellon are long and straggling, while those of Bishop Wood are short and compact; the habit also is better, flowers earlier and more abundant. This is my experience; it may differ with others.

ON TORENIAS.

BY VLADIMIR DE NEIDMAN, WEST PHILADELPHIA.

The introduction of the new "*Torenia Fournieri*" from Cochinchina has created quite a sensation in the floricultural world; several articles have already been written about it, and the GARDENER'S MONTHLY, in the October number, says: "That it is true the old *T. Asiatica* has long been popular and long will continue to be; but this charming novelty will divide the honors." *Torenia Asiatica* (Synon. *T. hians* and *vagans*), native of the East India, bears dark violet flowers, is more of a drooping habit, and is preëminently fit for hanging baskets. *T. Fournieri*, on the contrary, is an erect growing variety, distinctly differing from the previous one, having an orange spot in the ground center of the flower; but the real attraction and beauty of this new

favorite is, that it being bedded out, not only stands the sun perfectly well, but obtains, also, a dwarfish appearance, and blooming the whole season. By these rare qualities this variety will be heartily welcomed by every one having a flower-garden as an incomparable edging for the beds.

Reading the different remarks made about *Torenia*, my attention involuntarily was applied to one fact, that not one mentioned more than these two kinds; whether the others have already passed from memory, or by experience found not worth growing, I will not undertake to dispute nor decide, but simply call back to our recollection some of them which have in their time been received as favorably as the new *Torenia Fournieri*, *T. concolor*, native of China, flowers in Autumn; blue *T. edentula*, from East India, flower yellowish white, distinctly marked with purple violet, the sidelips have a deep purple spot; *T. bicolor*, raised by L. Van Houtte, (Gand), of a drooping habit; *T. Larpentæ*, (Synon. *Ceratostigma Larpentæ*), from North China, flower of lively blue, with a red throat, nearly quite hardy; *T. plantaginæ*, (*Ceratostigma plantaginæ*), found and introduced by Dr. Tindel, in Africa, from the shore of the White Nile, flower blue, labellum deep blue with white and light blue stripes; *T. scabra*, (*Artanema fimbriata*), from Australia, with blue flowers, the center being white, good for bedding out; *T. pulcherrima*, from China, flower purplish blue.

GROWING THE RICHARDIA ÆTHIOPICA.

BY MRS. LUCY A. MILLINGTON,
SOUTH HAVEN, MICH.

Perhaps some of the many lady readers of your MONTHLY would like to know how to get two flowers instead of one from every flowering sheath of their Calla lilies. As soon as the joint flower is cut, or begins to wither, pull the stalk down through the open sheath clear to the bottom. At the bottom will be found standing close to the stalk another bud, enclosed in a delicate covering. Cut the old stalk away as close as possible without injuring the bud, and if it has not been kept back too long it will grow up very quick. I have never failed to get both buds to flower. I never tie up the leaves close, but leave them free.

EDITORIAL NOTES.

GLAZING.—We do not quite understand the following, which we find in the *Polytechnic Review*. Illustrations would perhaps be required to make it plain. But as there may be something, if properly understood in the principle, of value to our greenhouse people, we give it in the hope that it may bring out further information:

"We lately saw a defectively glazed glass roof under treatment toward restoring broken panes and stopping leaks. Counted by the acre, the surface of such glazing is enormous in the city of St. Louis, and would be increased were the immunity from leakage and breakage nearly assured. The system of glazing used on the roof of the Royal Aquarium, London, is held up as a model of this sort of protection and convenience; it consists of a series of zinc bars of pot-hook section, with a return bend, the bars being screwed on the purlins. The top is simply a pot-hook or hanger section, at the bottom of the same section reversed. The glass rests in the groove of the lower bars and back groove of the intermediate upper one, in which it has full vertical play. The panes of glass lap each other; and the theory is, that no water can find its way inside the building covered by a roof glazed on this principle. The advantages of this system appear to be the diminution of breakage of glass from vibration, and expansion and contraction and other causes due to rigid fixing in the ordinary system, and the facility with which glass can be fixed or a damaged pane removed and replaced. The grooves carrying off water from the inside as well as from the outside is of course another advantage, for unless the roof be a very flat angle, indeed, water will not leave the glass, but will run down into the outside groove. Condensed water and vapors are, therefore, thus well got rid of."

HEATING SMALL GREENHOUSES.—In reference to our note in the November number, the *Galena Industrial Press* has the following useful facts:

"We know of an instance where house plants are kept thriving winter after winter in a room heated by a hard coal base-burner, and healthier plants or brighter flowers we have not seen anywhere. We do not suppose that leaky stoves, from which the gas is constantly escaping, would be healthy for either plant or animal life; but we have long since come to the conclusion

that what promotes the health of man, cannot be injurious to the plants. It is only necessary to refer to the bay-window, where the plants of Mrs. Cephas Foster may be seen from Fall till Spring, to assure our readers on this point. The window plants are, however, only a small part of those constantly kept in the two rooms heated by the same coal stove, year after year, and very few persons, if any, can show more thrifty plants, with equal care, than hers. The stove is an old-fashioned one, which has been in use for many years, and has no particular advantage over the more modern ones, so far as we know. Our conclusions are, therefore, favorable to that method of heating. Hard coal is used of course. The only secret is a constant supply of moisture from a cup of water on the stove.

A FINE GERANIUM.—We like to hear of well-grown plants, and give place to the following from the *Prairie Farmer*:

"In a recent issue we alluded to a wonderful geranium, the property of W. H. Perkins, Barnard, Vermont. The following letter from that gentleman under date of October 22, completes the history of the plant. Mr. Perkins says: 'The geranium has a single scarlet blossom and green foliage; is five years old; 4 feet high and 10 feet in circumference. It has twenty-nine branches from the main stem. The 13,000 blossoms are the number of individual flowers.'

The blossoms on a sufficient number of clusters were counted so as to enable me to make a correct estimate of how many individual blossoms a certain number of clusters would average to bear, so that only the clusters were counted, and the number of clusters multiplied by the number of individual blossoms that the clusters would average. The clusters contained from thirty to seventy blossoms each. It is not called a large story about here. The plant is still in the yard and in blossom as bright as ever, notwithstanding the chilly weather and the 2½ inches of snow which fell here last night. If the plant survives I will let you know of its wonders next season.'"

NEW OR RARE PLANTS.

BLANDFORDIA PRINCEPS.—This strikingly handsome greenhouse perennial was introduced by Mr. W. Bull, and gained the first prize as the best new flowering greenhouse plant at the Royal Horticultural Society's Exhibition in the sum-

mer of 1875. The stiff sub-erect distichous leaves are narrowly-linear, five to eight ribbed, and with a serrulate border. The scape is a foot high, bearing a corymb of many flowers, which are two



BLANDFORDIA PRINCEPS.

and a half inches long, pendent, regularly funnel shaped, with a bright crimson tube and deep golden yellow erect limb. It must be regarded as the most beautiful of the Blandfordias yet known. It has been figured in the *Botanical Magazine* for January, 1876, tab. 6209.

CARNATION PETER HENDERSON.—Nanz Neuner & Co. send us a photograph of which we can truly say that it fully justifies all that they say of it in the following note:

"We take great pleasure in sending you a photograph of our new double white carnation 'Peter Henderson.' It is a true representation of a one-year old plant grown in a 9-inch pot, bearing at the time, when the photograph was taken, over 160 flowers and buds, besides showing an abundance of young flower stems breaking from the base and joints. The flowers are large, pure white, and average $2\frac{1}{2}$ inches in diameter, although there are a great number of blooms on the plant which measure three inches and over."

CLEMATIS INDIVISA.—This lovely clematis should be looked after by owners of cool conservatories, who, as it may happen, know not what to plant in them. There may be little excuse for the "not knowing," perhaps; but a note should certainly be made of this clematis as one of the most useful plants for the purpose. It grows fast, but is not a coarse plant; it flowers freely, but is not showy. Its flowers are smallish, at first greenish, afterwards whitish, delicious to behold *en masse*, pretty when examined in detail, invaluable to cut from for decorations. In the Slough nurseries there is a plant of this clematis in company with a grand *Maréchal Niel* rose. It must be owned that the *maréchal* does his duty; would that every *maréchal* merited similar eulogy. But really it is a question if, all things considered, the yellow rose, producing its hundreds of lovely flowers, is a really more meritorious plant than the clematis. If you ask how to grow it, soil, &c., I can only say plant it in a good border, train it under the roof, and "there you are." The fact is, it will thrive under any conditions, provided it has the shelter of glass; for it is not hardy enough for the open quarters in this climate. I know it well in its native clime of New Zealand, and I was rather astonished to find Mr. Turner's plant equal in quality to a wild garland of it as it appears at home, although, of course, no greenhouse specimen can compare with the vast breadths of such a plant as it riots in its own woods, and laughs at calamities it knows nothing of.—*Gardeners' Weekly*.

ALONSOA ALBIFLORA.—New distinct species from Mexico, introduced by M. Roetz, the distinguished collector, flowering freely, from 12 inches up to two feet in diameter, producing

long terminal spikes of pure white flowers with yellow eye. It is recommended for pot-culture, as in the conservatory it will produce a succession of its flowers throughout the autumn and winter, when most acceptable for bouquets and table-decoration. It will be found a desirable substitute for *Lily of the Valley*, as used in our bouquets with so charming an effect when arranged so as to overtop the other flowers by one or two inches.—*Carter*.

FUCHSIA RACEMOSA.—A most distinct species, collected by Mr. Thomas Hogg, in St. Domingo, 1872, but now for the first time offered for sale, we believe, either here or in Europe. It was exhibited in full bloom at New York Horticultural Society's show in June of 1876, and attracted general admiration. It grows not more than 18 inches high, forming a round bush, every shoot being terminated with a raceme of orange-scarlet, wax-like flowers. It is of the easiest culture, and will undoubtedly become a standard plant, both for the greenhouse in spring, or for bedding out in partial shade in summer. As a market plant, from its distinct and beautiful appearance, it will have few equals.—*P. Henderson*.

SCRAPS AND QUERIES.

SNAILS.—W. G. J., Ithaca, N. Y., asks: "What will stop the ravages of snails in greenhouses? They appear to work at night, and are very destructive on plants of the *Salvia* and *Dracæna* kind. I have found some four to five inches long." [They are easily captured by placing slices of turnips, potatoes or similar things about, covering somewhat to keep them cool and dark. Ed. G. M.]

FINE AMORPHOPHALLUS.—Hon. C. W. Taylor, Hulmeville, Pa., writes: "I lifted an *Amorphophallus Rivieri* on the 5th of this month that measured 42 inches in circumference and weighed 26 pounds. It was sent me by Mr. Dreer, three seasons ago, and was then about one inch in diameter. I thought it was good growth for that length of time." [It is always a pleasure to receive accounts of superior culture. Ed. G. M.]

CAMELLIAS.—J. C. C., Phila., writes: "I should be much obliged if you would let me know through the *GARDNER'S MONTHLY* the proper temperature for *Camellia Japonica* and *Azalea Indica*; also whether they should be

kept rather moist or dry. I have not had any experience with them until this season, and as I have some fine plants, with a great many buds, I wish to treat them properly." [Camellias do not like a temperature over 60° or below 45°, and the Azalea is much like unto them. Any ordinary greenhouse atmosphere suits them. The air of living rooms is generally too dry. Ed. G. M.]

CURE FOR MEALY BUG.—A "Hard-Fisted Gardener" writes: "I agree with you point blank that there is no infallible remedy for curing bug-ridden plants with outany trouble; still there is a plan, that is, my plan, and which I know by experience works very well. I had a Stephanotis in my greenhouse that used to keep as white as snow, in spite of all the drenches we gave it. At last I had our boy take it down

and clean it with a paint brush and common soapy water. It was a tough job, but in less than half a day it was done. I did not wait six months and give them a chance to recover, but in a couple of weeks had him go over the plants, killing those that had escaped. This was but an hour's job. In another couple of weeks we gave them another tussle. I have no mealy bug now. The true remedy is forehanded industry."

FLORAL DECORATING.—Mrs. R., Columbus, Ohio, makes the following inquiry. If there is such a work it has escaped our notice. Does any reader know of one?

"If it will not be asking too much, can you tell me where I can get a book on the subject of Floral Decoratings, or How to Decorate? I saw an advertisement not long since, but have forgotten where I saw it."

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

Many complain of the struggle with insects and fungoid diseases. Some of this may be cured by washing trees in the winter season. Under glass, the best peach and grape growers would never think of letting the season go over without washing the trunks after pruning, with a mixture of soot, sulphur and lime. If the bark, as in the grape, be loose, it is stripped off first. The eggs of thrip, red spider, scale, and seeds of many "blights" and mildews, are thus destroyed. It is just the same benefit to wash young orchard trees. And this is especially true of scale covered trees. If the young trees are bad, cut away the twigs, so as the more easily to cover the whole tree, to the enemy's destruction.

It will be well to note what has been said about linseed oil in our last year's volume. There is no doubt but it will destroy scale and improve the health of the trees; but in a few cases it has been destructive, evidently from the use of mineral oil, and not pure linseed. The purity of the article should be ascertained. Trees that have suffered badly from scale often get hide-bound—a slitting up and down with the pruning knife will set them on their feet again.

This is generally supposed to be the pruning season. Orchard trees generally get too much pruning. In young trees only thin out so as not to have the main leaders crossing or interfering with one another. Or when a few shoots grow much stronger than the rest, cut these away. Insist on all the branches in young trees growing only on a perfect equality. On older trees which have been in bearing a number of years, it will often benefit to cut away a large portion of the bearing limbs. By a long series of bearings, branches will often get bark-bound and stunted, preventing the free passage of the sap to the leaves. In such cases the sap seems to revenge itself by forcing out vigorous young shoots a long way down from the top of the tree. It is down to these vigorous young shoots that we would cut the bearing branches away. One must use his own judgment as to the advisability of this. If the tree bears as fine and luscious fruit as ever, of course no such severe work need be done, but if not, then now is the time.

And, above all, look after the nutrition of the trees. Some people say that land which will raise good corn will grow good fruit trees, which is all right; but they should add that, like corn, they require regular and continuous manuring. There are some parts of the country where corn

can be successively taken for half a lifetime without manure. On these soils we need not manure fruit trees, but in all others we must, to have good results. This is particularly essential where trees are grown in grass, as both the trees and the grass require food. Where trees are grown in grass, we prefer top-dressing in June or July; but if it has not been done then, do it now. Where trees are kept under clean surface-culture, the manure is of course ploughed or harrowed in with the crop in the spring of the year. To know whether trees require manure or not, ask the leaves. If in July they are of a dark rich green, nothing need be done to them; but if they have a yellow cast, hunger is what is the matter. This, of course, is supposing they are not infested by borers, in which case they will be yellowish in the richest soil.

In the vegetable garden preparation is being made for early spring crops. Radish, lettuce and beets require but very little heat to start them, and may be put in at once when the ground is warm and dry, and there is no fear of much more frost. A little frost will not hurt them, even though it does follow the sowing, unless the germ is about pushing. This is the time when most hardy seeds suffer from frost, when they do suffer at all. The pea is also one of these early vegetables which a little frost will not hurt. Except, however, in the extreme South, the most of our readers will not think much of these things till next month.

COMMUNICATIONS.

EDIBLE PUFF BALLS.

BY MISS EMMA C. B.

The puff ball is wholesome, nutritious and delicious, cooked in any way that mushrooms are. The large, smooth sort contain the most food, and taste like the mushrooms of the West. The Starry puff ball, small, with a leathery coat which cracks off in a star-shaped setting, tastes like the N. E. mushroom and the morel of Ohio, and is to me more pleasing. In a country where many suffer from hunger, it is a pity that this quality of the puff ball is not known and appreciated.

COOKING PUFF BALLS.

BY MRS. LUCY A. MILLINGTON.

Yes, the "Puff Ball," or Lycoperdon, is eatable, and makes a very delicious dish; but is not so good as "Tuber album," the great white

truffle. That is an irregular mass, sometimes almost as large as a loaf of bread, and of just such a delicate brown on the top. When fit for eating the rind is cracked irregularly all over. When that is taken off (don't eat a fungus which cannot be peeled easily)—the flesh is as white as snow and as tender as fresh curds. Should be steamed ten minutes, and then simmered in cream, or any sauce you like. Don't cut, but break it in flakes for cooking. It is only fit for use when the flesh is white. I have cooked puff balls in the same way.

HOOSAC THORNLESS RASPBERRIES.

BY J. T. LOVETT, RED BANK, N. J.

In reply to T. L. Hamilton, Ill., I would state that the Hoosac Thornless blackberry has proved to be of very little value—I may say, almost worthless with us. Although it is a moderately good grower, it has not been winter-killed in the least; and I have purposely given it every exposure, subjecting it to severe winds with no covering whatever. It is free from most diseases and comparatively without thorns—not entirely so, however. The fruit is small and imperfect, so sparingly produced and so hard and unpalatable that it is only useful for variety's sake. I esteem the Dorchester and Lawton, or New Rochelle, the two old varieties that we have almost discarded, as of more value than Hoosac Thornless.

GRAPE CULTURE UNDER GLASS.

BY JOHN DON, FOREMAN TO PETER HENDERSON, JERSEY CITY HEIGHTS, N. J.

Further discussing the above subject, I earnestly desire to assist those who have started to cultivate the grape vine under glass, in order that they may more successfully cope with the rigorous changes our climate is subject to, viz.: *extreme cold, heat and drouth*. The following remarks are intended more directly to apply to the treatment of a cold grapery, where the vines are planted in a prepared border outside. The roots require to be protected with a covering of leaves or rough stable manure to the depth of fifteen inches, otherwise roots near the surface—where it is all important they should be—will get destroyed. When a top-dressing can be given, equal parts of sods chopped fine and well rotted manure will be an additional advantage before covering up. Covering should be done early in December; uncovering about middle of March.

Pruning should be done when the leaves have dropped. If any insects are concealed between the loose outer bark and inner, the former requires to be stripped, being careful not to injure the eyes on the spurs. A thorough washing with the engine dislodges and destroys all insects out of every crevice. The method is more simple and effective than painting the rods with the usual compounds. In this way I cleaned a large grapery infested with mealy bugs, and kept it so for three seasons. Before severe weather sets in, the vine rods require to be protected, otherwise the frost will injure or kill them outright. A good way is to lay them together along the front of the house in shape of a ridge, then cover with earth to the depth of four inches, leveling the earth back to its place when severe weather is past. *Extreme heat*, which would be the case in a span-roofed grapery, where both sides are exposed to the sun's rays, and the glass indicating 90° in the shade. My practice is to shade with a thin coating of whitewash outside, made by dissolving equal parts of lime and salt. It can be put on thin, not to darken the house much. The salt and lime crystalize on the glass, and is not easily washed off with rain. From the second week in June till the middle of August is the period it should be kept on. The past season it had to be renewed but once, and by the latter date it was nearly or all washed off. The method of giving air is important, especially in the early part of the season; ventilators should open all along the house at the highest point. Whenever the temperature inside indicates 85° to 90°, raise the ventilators slightly, increasing as the temperature rises. The temperature should be kept as even as possible, rising and falling with the temperature outside. It is not safe to use bottom ventilators when they admit a current of cold air through the house. When the thermometer indicates 75° at night, a little air should be left on the top. To counteract *extreme drought*, it is greatly to the advantage of the grape vine to mulch the border during the Summer months. A covering of salt hay or stable manure is well suited for this purpose. We used it the past season with best results. The border was top-dressed last Fall as recommended; now the border is a complete network of feeding roots within an inch of the surface, where they get the full benefit of air and moisture. A good plan is to plug up the leaders, and put stops in the gutters; let the water run

over on the border. The gutter breaks the force, and the mulching material will keep from washing, providing the fall is slight on the border.

A liberal use of water on the floor inside is of great advantage. A covering of sand to the depth of four inches is needed, as it absorbs and evaporates freely. Although it is customary to keep the floors dry during the period of blooming and coloring, yet this season we kept the floors thoroughly watered from the time of starting the grapery till the crop was ripened, and better colored or larger berries are not often seen than we had from this practice, the vines clean and healthy, and with well ripened wood.

EDITORIAL NOTES.

HIGHLAND HARDY RASPBERRY.—Mr. E. P. Roe says, in his recent trade catalogue, that "the fruit is small, and of very ordinary flavor," but yet he thinks it has value.

BEN DAVIS, FROM MICHIGAN.—Mr. Hoppe places before us some Ben Davis apples from the Grand Traverse region in Michigan. They are very beautiful in color, and twelve inches round. Can anybody beat this?

APPLES IN PHILADELPHIA.—Apples are selling in Philadelphia, this season, at \$3.50 per barrel; Spitzenbergs, on account of their increasing scarcity, bringing from 25 to 50 cents more. If any one can get a new kind that will be of the peculiar flavor of the Spitzenberg and yet be vigorous and healthy and an abundant bearer, there is room for it. Newtown Pippins are scarce; the agents say they "blast" under the skin. The Baldwin and Greening are the commonest kinds offered, though the Northern Spy increases in quantity every year. Chenango Strawberry for the first time appears in great quantity last autumn, and seems popular.

VINE DISEASE FROM AMERICA.—Max. Corun charges a new vine disease in France on America, introduced, he says, by American vines. He calls it the *Anthraco-se*. There are white spots on the leaves, which afterward become charcoal black. It is caused by a fungus, *Phoma viticola*. He also complained of another disease on the leaves, looking like velvety spots, which he says is caused by another fungus, *Cladosporium viticola*, and then still another fungus, *Peronospora viticola*, "attacked the leaves and young shoots in a most destructive manner."

CULTURE OF COFFEE IN THE SOUTHERN STATES.—We see it stated that efforts are being made to introduce coffee culture into the Southern States; and that Government is either to recommend it, or in some way to be called on to aid it. It is a beginning at the wrong end. Let some one plant a few hundred trees, and show by the facts and figures that it can be done; but this importing trees by the thousand, and scattering them "pell mell" everywhere, does no good at all. Besides, it is very doubtful whether the coffee would do well in any part of our territory. In Liberia, where they have what is regarded as a peculiarly hardy and good kind, the temperature is very equable and the land low. Sixty degrees is about their lowest and ninety degrees their highest temperature; and it does not do well even here, when we go much over 5000 feet.

FRUIT CULTURE IN ALABAMA.—C. C. Langdon recently delivered an address before the Industrial Convention of Alabama. He referred especially to the apple, peach, pear and grape, and believed no State in the Union better adapted to fruit culture than Alabama. But there are few orchards in Alabama. Many trees have been planted, but they die of starvation. The collar borer is the worst foe to the apple and peach; though soft soap put about the root will keep him out. Southern varieties of apples are the best. Ten thousand barrels of Western apples come annually to Mobile.

Of the peach, after referring to the curculio and borer, Mr. Langdon says:

"Notwithstanding these serious drawbacks, the peach crop seldom fails entirely in our State, and frequently a full crop is realized; and, taking in view the whole ground, I am confident that peach-growing is destined soon to become one of the most important of what are called our small industries. For supplying the Western and Northern markets, we enjoy peculiar advantages. The peach ripens here a month or six weeks earlier than there, and during that period we can find a ready market in the cities of the West and North for all we can grow. The very early varieties recently introduced, enable us to commence shipping the last week in May, and it can be continued, with other varieties in succession, to the middle of July. Some estimate of the probable extent and value of this trade in the future may be formed from what has already been done this season by one man. A fruit-grower in Mobile county (Capt. I-

Donovan, now present in this convention) shipped to St. Louis alone, this season, between the last of May and the 20th of July, some six thousand boxes (containing one-third of a bushel), on which he realized, in cash, after deducting all transportation charges and commissions, a clear profit of *five thousand dollars*! Now, if one man, in one county of our State, shipping to only one city, can accomplish such results, who can estimate the value and extent of this trade when enough shall engage in peach-growing to supply all the thousand cities, great and small, of the West and North? Suppose ten men in every county of the State should do, on an average, what my Mobile friend and colleague has done this season, there would be realized, from this one product alone, over *three and a half million dollars*! And this from one of our "small industries!" But before these results can be reached, we must have, on all our principal railroad lines, better and additional facilities for transportation. We must have special fruit cars, fast freight trains, and cheap freights. And these we shall doubtless have whenever the business will authorize it."

CALIFORNIAN FRUITS IN CALIFORNIA.—Our correspondent Mr. T. G. Yeomans, is traveling in California. In a letter to his family, he says:

"While it grows that of almost every variety, it is generally conceded, by those who are best informed on the subject, that their fruits, of the apple and pear at least, while they attain large size, are inferior in quality to those grown in the portion of the Atlantic States where they are grown most largely; and I think it is generally admitted that the same difference, in a greater or less degree, exists between peaches, cherries, berries, and other fruits. The apples I have tasted, from time to time for the last two months, are insipid in comparison with the same varieties grown with us in western New York; and the same difference appears in such pears as I have tasted. If this be true of the green fruit, it will follow with the same fruits when evaporated or canned. The strawberries and other small fruits are almost exclusively grown by the free use of irrigation, which unquestionably gives large size at the expense of fine quality. I am inclined to the opinion that the foggy weather, so characteristic of this State generally, taken in connection with the wonderful fertility of the soil and irrigation, tend to give size of product, but wanting in flavor or quality. Beets, squashes and other vegetables are forcible illustrations;

and the efforts to manufacture sugar from beets, in this State, have shown this vegetable to be wanting in saccharine quality. And the quality of grapes grown in the most fertile valleys is admitted to be inferior to those grown on the higher lands, either for raisins or wine; and it is probable that the want of popularity of California wines may be owing to an inherent original want of an essential element in the grapes.

"As evidence of the apparent effect of fogs and moisture on vegetable growth, witness the mossy trunks and branches of apple trees in every part of the State; and not on apple trees only, but on almost all fruit trees, as well as many trees not fruit-bearing; also on the roofs of buildings and fences—often on one side only, but generally on every fence of many years' standing.

"In corroboration of the foregoing news, let me mention that, while peaches are grown plentifully and sold cheaply here, and also canned in large quantities, yet the canned peaches that are conceded to be the best quality and sell at the highest prices, are put up in Baltimore. The sweet corn that sells at the highest price is canned in Maine."

ASPARAGUS-FORCING IN PARIS.—I have lately visited a very extensive establishment for the forcing of asparagus in Paris, of which a few words may not be without interest to the readers of *The Garden*. In all, about a half an acre of glass is devoted to the culture, and a supply is obtained from early in September to the end of April. It is forced in three ways: in houses heated with hot water; in frames sunk in the ground and heated in the same way; and lastly, in frames plunged in warm stable manure. It appeared to be forced with equal success in each case, though the stable manure seemed to offer the simplest means. As usual, here the frames are small—about four feet wide. The roots are placed directly on the manure, not flat, as they would be in the open ground, but packed as closely as possible, from 500 to 2000 roots according to size—going under one light. A mere sprinkling of soil is placed over them. As a result, the shoots come up very thickly. The roots employed are strong and fine ones, three years from the seed. As many as five crops of roots follow each other throughout the autumn, winter and spring, in the same frame. The universal straw mat is used to cover the frames at night. A dozen persons were employed solely in gathering and "bundling" the asparagus for market; so that the quantities gathered for use

are considerable. All is done in the simplest and rudest manner, the securing of good crops being the only thing considered.—R. W., in *The Garden*.

HYBRIDIZATION OF THE MONUKKA AND BLACK HAMBURGH GRAPES.—The Black Monukka is a grape believed to be of Indian origin, which was received from the late Mr. Johnson, gardener at Hampton Court, and distributed by the Royal Horticultural Society. It is a grape of great peculiarity and of great excellence. It is of exceedingly robust growth, and a somewhat shy bearer. The bunches produced are, however, very large, from twelve to twenty inches or more in length, and of a regular, tapering form. The berries are small, long-ovate, inclining to be conical like an acorn, measuring seven-eighths of an inch in length and five-eighths of an inch in diameter. In color it approaches black, when well ripened, but is more frequently of a dull reddish-brown. It has a thin coating of bloom. The skin is thin, adhering to the pulp, which is firm, fleshy, and not melting, yet very tender and full of juice. It contains no perfect seeds, only one, or at most two, half-formed, and these being soft, like the pulp, are eaten with it, as well as the skins. The flavor is rich and sweet, of the most agreeable character, not in any way peculiar, yet refreshing and pleasant to the palate. The black monucca is termed a seedless grape. It is so, however, only so far as the seeds remain immature. The seeds are formed, yet, from some cause, they are not perfected. This failing may, perhaps, in some measure, account for the smallness of the berry. The peculiarity may possibly be due to defective setting.—A. F. BARRON, in *The Journal of the Royal Horticultural Society*.

NEW OR RARE PLANTS.

STRAWBERRY—THE PHENOMENON.—A singular strawberry under this name has appeared in Belgium. On the one stem there are always two strawberries, so that the old expression of "two bites to a berry" is not a choice but an actual necessity, irrespective of size; and yet it is not a small berry or "berries," for it or "they" is, each half, two inches long by one wide.

STRAWBERRY—PROF. ED. PYNXAERT.—This strawberry is said to be an "enormous fruit." It is figured four inches across, which is about twelve inches in circumference: but

as it is one of the Cockscomby kinds, cross measurement is deceptive. How much will a dozen weigh? This is the true strawberry test.

STUMP APPLE.—While absent from home last Fall, some specimens of this fruit were received from Mr. J. R. Stone. Our contemporary, the *Country Gentleman*—than whose Hort. Editor, J. J. Thomas, there is none more competent to give a fair opinion of a new fruit—thus speaks of it:

"The Stump apple has excited considerable attention of late years in the neighborhood of Rochester, and was briefly described in the Report of the Committees on Native Fruits at the Winter Meeting of the Western New York Horticultural Society, in January, 1876. It is distinguished for its beauty of appearance and its great productiveness, and sells at a high price in market. It ripens about the middle of Autumn. The following is a description: Size medium or slightly above; form long conical, smooth and regular, obtusely and scarcely ribbed; skin smooth, striped, blotched and mottled with brilliant red on light, clear yellow ground, with a few large russet dots; stem quite short, in a narrow, even cavity; basin narrow and ribbed; flesh white, partly stained with pink, with a very good sub-acid, aromatic flavor—somewhat in its character like the Fameuse, and nearly as good.

This fruit resembles the Red Stripe of Indiana in several particulars, but the stem of the Red Stripe in the specimens we have examined is much longer than those of the Stump? This difference, however, often occurs between large and small specimens, the smaller having the longest stem, which might result from growing on older and more crowded trees. We give the above description to assist further investigation.

Dr. Warder, in speaking of the Red Stripe, says, "Mr. Rockhill, of Fort Wayne, who introduced this apple, made more money from the trees than from twice as many of any other sort," in which respect it corresponds with the account of the Stump, which has proved eminently profitable as a market apple. It is impossible to pronounce on the distinctness or identity of the two apples when grown so far apart and in so dissimilar latitudes and soils as Rochester and Fort Wayne, by the mere examination of specimens."

SCRAPS AND QUERIES.

HIDE-BOUND TREES.—J. K. S., Cincinnati, writes: "Among the Germans *over the Rhine*, as we call their location here, there is a practice of slitting up the bark of some trees that do not grow freely. They say they are hide-bound. What is the philosophy of this practice? It seems to me very absurd. I would as soon slit up my leg to cure the rheumatism. What does the GARDENER'S MONTHLY say?"

[Say what it has always said, that experience proves it to be an excellent practice in hide-bound trees. We place our advice on the broad basis of experience, and if our correspondent really wishes to test the question in the way he himself proposes, we are ready to do it. He may take his rheumatic leg and slit it down an inch deep, if he likes, from the knee joint to the heel, and we will slit our best pear tree; and after all this has been done, and we have the effects before us, then discuss the "philosophy" of the thing. Please write us word when the comparative test is to begin, so that we may make a note thereof for the benefit of our readers. ED. G. M.]

LIME FOR AN APPLE ORCHARD.—A Bucks Co., Pennsylvanian, writes: "My fruit crop has been very good this year; I had nearly as many apples as last year. The prices obtained were from 60 cents to \$1.20. My apples were extraordinarily fine, owing to the wet season. I am spreading 35 bushels per acre of lime over my orchards. I am a little afraid of it; some say that lime is ruinous to orchards. I wish I knew about it. Give me your opinion of lime for orchards."

[We know of no reason why lime, as suggested by our correspondent, should not be an advantage. ED. G. M.]

DWARF APPLE STOCKS.—J. G. B., Newburgh, N. Y., writes: "I have been a constant reader of your highly esteemed journal for many years, but do not recollect of having seen any detailed account of the history of the so-called Paradise and Doncaïn stock. To what class of trees do they belong botanically, what is their nativity, how are they propagated, and which of the two is more desirable for dwarfing the apple? Any information regarding the above query will confer a favor upon your humble servant."

[The Paradise and Doncaïn apples, used for stocks, are not distinct species, although it has

been thought so by botanists of the past, and is still, so thought by some of the present age. But horticulturists understand variations better than many botanists do, and there is no doubt we think that these apples are dwarf varieties of the ordinary apple, *Pyrus Malus*, just as we have dwarf box or dwarf anything. Of course there are some "characters" noted

in botanical descriptions, but they are worth no more than the characters which divide a Red Astrachan from a Lady apple. For very dwarf apples the Paradise is used, as it is the weakest growing stock. The Doncain grows stronger, and an apple on this will often grow nearly as vigorous as one on an ordinary apple stock. Ed. G. M.]

FORESTRY.

EDITORIAL NOTES.

THE EUCALYPTUS IN ALGIERS.—Mr. Playfair, the English consul at Algiers, has sent a report to his government on the improvements brought about by the planting of the Eucalyptus. He very properly condemns the nonsense that has appeared in relation to the Eucalyptus as injuring the real value of the tree. Many hundred thousand have been planted in Algeria since 1870. They were planted in marshy ground. The immense growth calls for an increased supply of moisture, and in this way marshy ground is made dry, and with this root-draining mosquitoes as well as fevers disappear. It is by acting as a drainer of the soil that its merit as a purifier of the atmosphere exists; and in this respect Mr. Playfair considers it has been a great boon to that fever-stricken country. He also adds that the tree is not so tender as some people think, but can be made to thrive in any part of the world where orange trees will live through the winter.

EUCALYPTUS TIMBER.—Now that the Californians have timber from their fast-growing blue gum, they fear it will be of little use for many purposes. It splits with the least heat. There are many things required to make first-class timber. We hoped for much from the yellow locust, a few years ago, and the Philadelphia, Wilmington & Baltimore Railroad had their cross-ties of it, but had to take them all out in a year or two. It was too hard to hold a spike.

EUCALYPTUS IN INDIA.—It is to be hoped that the blue gum will flourish in many places on our continent where there is no frost; but we

must try to profit by others' experience. It has been found a failure on the plains of India, where very much was expected from it.

LARGE CHERRY TREE.—Though not included in botanical works, the cherry of our gardens is one of the commonest of wild trees in Pennsylvania, and they, in the short time since their escape from culture, have grown to enormous sizes. The editor of *THE GARDENER'S MONTHLY* has one on his grounds that is 8 feet 6 inches round, 5 feet from the ground; and this is considered a very large trunk; but there is one on the grounds of Mr. Richard Cripp, of Byberry, Pa., that is double this, or *sixteen* feet. Can any one beat this? The cherry is highly esteemed for its timber by cabinet-makers. It resembles mahogany, when polished. It is also a very valuable fuel; but we do not know of any other demand for it.

HARDINESS OF THE EUCALYPTUS IN PHILADELPHIA.—Mr. Joseph Wharton reports to the Academy of Natural Sciences, that trees, even when somewhat protected, died last winter.

A NEW PRODUCT FROM THE PINE.—Vanillin exists in the sap of the pine (*Pinus sylvestris*) and of the larch. For the purpose of procuring it, the trees are felled during the period when vegetation is most active, and are stripped of their bark. They are then immediately scraped, and the product collected in vessels of tinned iron, is immediately heated on the spot to prevent fermentation, filtered, concentrated, and allowed to cool and settle. A substance is thus obtained which resembles powdered sugar, and which is known as coniferin. This is a stable compound, and is sent in barrels to Paris, where the vanillin is extracted. The process of extracting the vanillin is an expensive one, but the

product is procured at a less cost than the natural vanilla of commerce can be purchased at.—*Scientific American.*

A REDWOOD.—Mr. James English is still at work on the redwood tree which he felled at Russian River station, California, some few months ago. He has already made from it 250,000 shingles, 1000 fence posts, 6000 stakes, lumber for a dwelling-house and out-buildings, and has timber left for 300,000 shingles. The tree was fourteen feet in diameter.

SCRAPS AND QUERIES.

LEMON WOOD.—W., West Philadelphia, writes: "Having occasion to have use for some boxwood recently, I found it very dear; I suppose it grows too slow to make a profit in our country, for I have noticed some edgings here in an old garden that are no higher now than they were twenty years ago. When in Rome, a few years ago, I was shown some work made out of wood of the lemon tree that was considered almost as good as if made from box; and I venture to make the suggestion that a planta-

tion of lemon trees for the sake of the wood, to say nothing of the fruit, would be profitable. In the black, peaty soils of New Jersey it ought to grow very fast. The lemon tree is generally grown in rooms and tubs about here, but it would no doubt do well out if tried. Can you tell me of any experiments that have been made in this direction?" [We know of no such experiment, and have not the slightest idea that it would succeed. We are surprised that our correspondent sent this communication to us. It was no doubt intended for some of the daily newspapers. Ed. G. M.]

PICEA ENGELMANNI.—A correspondent, who is very familiar with the Coniferall of the American continent, writes: "Is it possible that the beautiful spruces collected by you and Mr. Hoopes from the highest timber growths of Gray's Peak in the Rocky Mountains of Colorado, are really of *Abies Engelmanni*? If they are, they do not agree with the description recently given of this species by Prof. C. S. Sargent."

[We can only say that what we take to be *Picea Engelmanni* are the same, and we think from the same location, as those from which Dr. Parry made his original description. Ed. G. M.]

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

BEGGAR TICKS.

BY JAMES NISBET, PAWTUCKET, R. I.

I notice in the August number of the MONTHLY, notice of a new forage plant, *Cynoglossum Morrisoni*—Beggars' Ticks. I thought it would be well to call your attention to the same, as there is a mistake about it. *Cynoglossum Morrisoni* is Beggars' Lice, and is of the Borage family. The Beggars' Ticks is *Bidens frondosa*, and is of the Composite family. As it may mislead others, hence my reason for calling your attention to it.

I hope you will continue to publish your notes of your travels. They are very interesting to me.

SCARCITY OF DOGWOOD.

BY MISS M. MUMFORD, WASHINGTON, D. C.

I think the *Boston Journal of Chemistry* has made a mistake as to the *Rhamnus frangula* being used for the manufacture of gun-powder; for

in *Science Gossip* for June, 1877, is a comment on a previous article about *Cornus mascula*, which is called in Europe the "cornelian cherry," and which the writer adds, "if my memory is correct, is used for the manufacture of gun-powder."

Gray says that *Cornus mascula* is sparingly planted here. It is a tall shrub or low tree, with yellow flowers; fruit bright red; the pulp eatable and pleasantly acid.

The first article to which I referred (*Science Gossip* for April, 1877), says "it is a native of Austria, and little cultivated in England. In Switzerland the berries are eaten by children, and made into sweetmeats and tarts."

Our most beautiful of the Dogwood family is *Cornus Florida*. Tree 12 to 30 feet. More common South; very showy in flowers, which are white. The wood has been used for domestic and other purposes. Virgil says: "*Bono bello cornus*," and Evelyn—later—"that wedges made of it are durable as, or rather like iron." There is a trite adage of the farmers derived from its early

flowering, indicating the peculiar season for planting their corn. I would like to know the saying. Is the bark still used as a substitute for Cinchona? Gray says "it is bitter and tonic."

Query last, why called Dogwood?

[The *Cornus* of the ancients comprised two species—the male, which we now call *Cornus mascula*, and the female, now *Cornus sanguinea*. These are the only two with which they were acquainted. The *bono bello cornus* of Virgil refers to a light lance made of the wood of one of the species, and which was used in war. The American *Cornus florida* has much the same good properties as its European sisters, for *Cornus*, even including the male cornel, is a noun feminine. The wood is still used for wedges, and other things where strength and small bulk is desired. It is in common use in Philadelphia among lumbermen and draymen for spring levers, for in addition to its great strength it will bend any way without breaking.

During the late war the bark was in common use in the South as a substitute for quinine, and it is still regarded as perhaps the best substitute for it. According to one author, it is called Dogwood because in olden times a decoction of it was the popular wash for mangy dogs. But another, with more probability, refers it to the celtic *dagge*, from which our "flagger" is derived, and which is in accordance with its classical history.—Ed. G. M.]

POPLARS, ABELES OR ASPENS AND COTTONWOODS.

BY DR. JOHN A. WARDER.

In the GARDENER'S MONTHLY for November, 1877, are some strictures upon the name *Populus angulata* used by my friend, Dr. Furnas, of Danville, Indiana, as applied to the Carolina Poplar. His stock was received from Mr. Parry, New Jersey, and through him it came under my notice, in some cuttings received last spring, which have made a growth of three to four feet. For the suggestion of the name *angulata*, as applied to these plants, I must assume the responsibility, and it may be an error. The conclusion may have been reached too hastily. It was given on the authority of Michaux' *Sylvæ Americana*.

Having been induced to look up the authorities within reach, the following analysis of the genus, the result of this investigation, is presented for the benefit of your readers.

COTTONWOODS.

1. *Populus angulata*—Michaux, Carolina Poplar. Michaux says this species, which he met under the name of Carolinian Poplar, was found southward, in Virginia, and on the Mississippi and Missouri rivers growing with the Cottonwood, *Canadensis*. He describes it as tall-growing and upright, which is the character of the Carolina. The buds are short, dark green, and destitute of the resin found on those of the Cottonwood, and other poplars. This is believed to be the tree so prevalent in parts of Belgium, where it is planted along the canals, for which purpose it is especially adapted by its upright habit.

2. *Populus Canadensis*, of Michaux. The Cottonwood is considered by Dr. Gray* to be the *monilifera* of Aiton, and the *laevigata* of Willdenow. Wood's No. 5 *monilifera* of Aiton, seems to be different with habitat "on the Hudson, near Troy, N. Y., apparently native." "Fide Beek."†

Michaux found this species as far northward as 43°. It is abundant in the Black Swamp, in northwestern Ohio, and fine trees may be seen on the banks of the river below Detroit, Mich. Michaux describes the tree as larger than the *angulata*, and the bark as thicker and more deeply furrowed, having a wider head and with the boughs more thickly branched. This character of the outer bark has attracted the attention of the fishermen on the banks, who utilize it as a substitute for the more costly bark *Quercus suber*, or cork. Sections of this substance, often three inches thick, are turned into oval form and perforated, so as to be used as floats to their gill-nets.

Michaux reports this species rare on the Atlantic slope, but very common on the Mississippi above the Arkansas. At the mouth of the last named river it grows abundantly around the town of Napoleon. It is the chief source of the steamboat fuel on our southern streams.

3. The Virginian or Swiss Poplar, *P. monilifera* of Michaux, supposed by Gray to be *P. monilifera* of Aiton, does not appear to have been found in this country by the Michaux' father or son, but they say it is extensively cultivated in Europe, especially in Switzerland. In France the males only are found. The young shoots are angular. Comparing it with

*Manual of Botany, Asa Gray, 2d Edition, 1856, His. No. 4, page 419.
†Class Book, Alphonso Wood, 41st Edition, 1855, page 507.

Cottonwood, Mr. Fancourt, director of forests and water-courses, says the leaves are smaller and less distinctly heart-shaped; the young shoots and twigs are smaller and less angular, becoming cylindrical in the third year, and the limbs are less divergent than the cottonwood. It also grows faster, and succeeds in drier soils, hence its popularity in France.* The wood is said to be softer than the cottonwood or, *P. Canadensis*, of Michaux. Dr. Torrey found it in western New York, on Lake Oneida and Genesee river.†

4. The Cotton Tree, *Populus argentea*, Michx., and according to Gray *P. heterophylla*, L., is found in the Middle, Western and Southern States; and Micheaux, especially, refers to a large swamp in southern Illinois, and to Fort Mapac, on the Ohio river, as habitats.

The tree is large, with thick bark, the shoots are round, the young leaves very downy, becoming large, and having the lobes at the base overlapping each other.

The wood is described as inferior, becoming yellowish at the heart.

All of these would probably receive the name of Cottonwood among our Western wood-choppers; and, indeed, they bear very near resemblance, and have close analogies. The first botanical descriptions have been purposely omitted in this resumé.

POPLARS.

Populus balsamifera—Tacamahaca, or Balsam Poplar, is a very distinct species. This is particularly northern, extending to Stoneleake, lat. 63.4. Leaves on round petioles, dark green above, rusty brown beneath; tree of medium to large size, with open, straggling branches. Though unseemly, it is often found in cultivation.

Populus canadensis, of Aiton, Balm of Gilead, is a variety called also Heart-leaved Balsam Poplar. This form is chiefly seen in cultivation, though it has little to recommend it.

Populus angustifolia, of James, is described by S. B. Watson, of Clarence King's survey of the 40th parallel, as a common tree in the Rocky Mountains. It is now grouped with *canadensis* and *balsamifera*, of which it is a very distinct western form, having also quite a diversity in its foliage, some leaves being ovate, while in other trees they are nearly linear, and with a drooping

spray. The resemblance to willows is very striking, as seen on the Platte river, Colorado.

8. *Populus trichocarpa*, Torrey, is western, found in Truckee Valley.

9. *Populus nigra*, L. European, was not recognized by the Michaux in this country, but trees found near Albany, N. Y., on the Hudson, and in New York city, were described by them as *P. Hudsonica*, and by Pursh as the *betulifolia*. There is little doubt about its having been introduced from Europe, where it grows to a large size, and with *P. alba* is much used along the Danube in reclaiming low overflowed lands, whose thickets arrest the drift of floods and furnish abundant material for the fascines used in the wing dams and levees, and for improving navigation.

10. The Lombardy poplar, *Populus dilatata*, of Aiton, is no longer looked upon as a species, but merely a variety or sport from the *nigra*. This is extensively grown as an alley tree along the highways of Southern Europe, where it is a great favorite, despite its extremely formal habit. It was early introduced and extensively planted in this country also, particularly in the streets of towns and cities. In the Eastern States, very large trees may yet be seen in good condition. In the Western States, especially in Northern Illinois and Wisconsin, it has been largely planted in fence rows as wind-breaks, and the effect in a prairie country is very pleasant; but in our Western soils the tree does not prove to be long-lived. The plants found in this country appear to be only staminate or males. How is it in Europe?*

Watson, in his "Annals of Philadelphia," says this tree was introduced into that city in 1784 by Wm. Hamilton, Esq., of "The Woodlands," (near the Centennial Exhibition), and all the Lombardy poplars in the United States may be sidered branches, elongations or offsets of the tree from which Mr. Hamilton obtained his specimen.†

ASPENS.

Aspens, or *Abeles*, form a distinct group among the poplars. They are usually smaller trees, especially the American species.

*N. Amer. Sylva, vol. ii, page 120.

†New York Natural History, Botany, vol. ii, page 215.

‡Dr. Torrey, Nat. Hist., N. Y. Botany, vol. II., p. 316.

*This question is already answered by my friend and jury colleague at Vienna, Cae-Giovanni Carlo Siemom, who says this poplar is but a form of *P. nigra*, and that all the plants are males. He adds that it has long been extensively planted in Lombardy, particularly along the river Po. In evidence of its antiquity he quotes Ovid's reference to it.—*Manuale d'Arte Forestale*, Firenze, 1872, p. 137.

†Darlington's Agr. Botany, 2d Ed., page 332.

11. *Populus tremuloides*, Michaux. Quaking asp, is here but a small tree of the second or third class, seldom more than twenty to forty feet high, particularly toward the north, where it becomes a mere shrub. A form of this species in the parks of the Rocky Mountains springs up spontaneously in the greatest abundance wherever the woodlands have been burned over. The older trees had handsome shafts fifty to sixty feet high, and are used in construction. This is almost unique as a deciduous tree among the conifers of that region.

Generally speaking, this species has little value, but there are some peculiar forms which are cultivated and placed for effect in gardens and parks.

12. *Populus grandidentata*, Michx., Michigan poplar of nurserymen is a much finer tree, also northern in habitat. On account of its rapid growth, this had received considerable attention by Western planters, and though only a poplar, merit is claimed for it as a fencing material;* the poles cut in early Summer and peeled have been found to last well as rails nailed to posts for fencing.

13. *Populus canescens*, or the *Populus alba*, Linnaeus, the common white or gray poplar, with its many forms or varieties of Abeles, Athenian, maple-leaved and silver poplar.

Though widely diffused and planted everywhere, and multiplied wonderfully by numerous suckers in their new home, these are believed to be of European origin. If correctly understood, my good friend, Professor Karl Koch, of Berlin, who has made a life study of trees, considers this species to be American, or common to both hemispheres. His valuable work† is unfortunately not at hand.

Populus tremula, Linn, is a small tree in Europe which may some day be united with our *P. tremuloideus*. It is chiefly valued as a first crop on devastated tracts to prepare the soil for that of greater utility, says Simone.‡

In Southern Europe the white poplar becomes a noble tree, and the timber is much used in the construction of dwellings. It may be found valuable by our Western planters. Michaux claims two distinct trees, the white and the gray, attributing superiority to the latter.

EDITORIAL NOTES.

THE WAGES OF INSECTS.—A botanical friend wrote to the MONTHLY some months ago, suggesting that the editor had "caricatured" the views of those who dwelt on the great advantages to be derived from cross fertilization through insect agency. We have already given some quotations showing that we have in no way misrepresented what was once taught, whatever may be the lessons now; and we give here another extract from a recent paper by Professor Beal, in the *Scientific Farmer*, showing that he not only understands the position of our friends as we have done, but evidently adopts the views as entirely sound:

"We are prepared to understand that honey is placed in flowers as wages to pay insects for serving the plants. The gay colors and odors are advertisements to call the attention of insects to the rich supplies of food in store for them. Saunders, of Canada, cut off the petals of raspberries, and by so doing made it difficult or impossible for the bees to find honey."

THE ROOT OF THE TUPELO TREE.—Physicians, when they wait on us, are very particular to have their prescriptions in Latin. They say it avoids mistakes; but when they are among themselves they do not seem as particular. The *Medical and Surgical Reporter* says that the root of the Tupelo is very useful in obstetrics, being "the lightest of all woods." Now, the Tupelo is generally supposed to be *Nyssa sylvatica*, but the root of this tree is a long way from being "the lightest of all woods." The Tupelo is also called "sour gum," and the Liquidambar is the "sweet gum," which has light roots, "and it is not at all unlikely that the *Reporter* is talking of the Liquidambar when it meant the *Nyssa*, the "sweet" and not the "sour" gum.

COMMON NAMES OF PLANTS.—Easy in comparison as these seem to be, no one not in the secret can have the least idea of the labor and trouble they give to those who wish to understand what they hear or read about. A case in point we find in a recent *Chicago Tribune*. A correspondent from Missouri tells a wonderful story about the "Wan" weed, and which is also the "Dyer's weed." It grows in the State in great abundance everywhere, and may save thousands of dollars to tanners in leather making. The editor considers that the easy common

* Bryant's Forest Trees, page 124.

† Koch's Dendrologie.

‡ *Manuale d'Arte Forestale*.

name informs nobody, consults his books and finds it to be, he says, "*Reseda luteola*;" while the innocent plant is, no doubt, *Polygonum amphibium*. It would have been hard, no doubt, for that correspondent to have sent his specimen to his State Botanist, and have had to learn so "hard" a name as *Polygonum amphibium*, instead of writing "Wan" to his editor; but it will be harder still to unlearn the fact started in this loose way that *Reseda luteola* is a good plant for tanning leather.

THE PRICKLY PEAR.—In some tropical countries hedges of the prickly pear have been recommended in order to check the progress of forest fires. But there seems to be no blessing without its attendant evils, and so it is here. The birds scatter the seeds, and the plant spreads so that it is one of the worst possible of weeds. Being a succulent kind of cactus, hoeing and cutting up, of course, only increases the pest.

INJURY FROM EUPHORBIA.—Often reports get into the papers of injury from plants that are evidently apocryphal; but an account in a Southern paper of injury to a lady at Macon, Ga., from the juice of the *Euphorbia* is no doubt correct. The juice is extremely acrid, and is used to burn out warts.

PINUS BOURSERI.—This is figured in a recent number of the *Garden*, and *Pinus contorta* is said to be synonymous with it. We have no knowledge as to the priority or history of this name or who is its author.

AGRICULTURAL ANTS.—Dr. McCook, of Philadelphia, has been telling us about ants in Texas that sow, reap, and store grain in granaries. There are some, also, that keep stock:

"It has been stated by Sir John Lubbock that certain kinds of aphides are preserved by ants for purposes of the food afforded by a certain sweet secretion in the former, the eggs being carefully guarded and the young larvæ fed and cherished until they ultimately attain their perfect form, when they served as contributions to the dietery of the ants."

FLAX BLIGHT.—Among the plagues of Egypt mentioned in Genesis, was a blight on the flax fields, and this trouble has continued more or less to our time. At the late meeting of the *French Association for the Advancement of Science*, it was announced that the disease was caused by a species of thrip, and which is so very small that it can be readily transported by the wind.

ABIES VENUSTA.—In the vegetable kingdom the conifers bear a markedly high and deserved rank, but none more so than the *abies*, or fir family. One variety of the *abies* is found alone within the borders of San Luis Obispo county, and is so rare that, until quite recently, but one specimen was to be found in all Europe. So rare is a knowledge even of this beautiful tree that we have heard but two persons mention it in our two years' residence in San Luis. These gentlemen were Dr. W. W. Hays and Mr. Ernst Krebs. Mr. Krebs has spent large sums of money to obtain specimens, but has never succeeded in getting healthy ones until the present week, when he received seventeen fine young plants. The foliage resembles, slightly, the common firs of the forest. It is far more delicate, the leaves longer and not so crowded upon the limbs, which are slender and graceful. The upper side of the leaf is a deep bright green, while the under surface is straited with silver, white and pale sea green, perfectly beautiful in their delicate blending. It is said to be the most beautiful object among all California's forest treasures, and when the wind puts in motion its airy branches are said to resemble undulating waves of silver foam. From these young specimens in the grounds of Mr. Krebs, we can imagine what a forest would be where the spiral trunks rear themselves to a height of fifty or sixty feet, and are clothed with a profusion of its delicate foliage.

The habitat of this treasure is a circumscribed spot of a few acres in the deep recesses of the Santa Lucia mountains, on the border of Monterey county, and so inaccessible that but few, even of the hardy hunters, have ever seen it. This is said to be the only spot in the known world where the tree is found. In the early days of California the padres used to send Indians to gather the resin that exudes from the trees where sacrificed by accident or design; and this resin was burned in the censers before the high altars upon great occasions. From this fact it derives the local name of "*Pinabeta de los Padres*." Mr. Krebs has made arrangements to have a supply of seed gathered next season, and will, we hope, be successful in introducing it into common cultivation.—*San Luis Obispo Tribune*.

SOMETHING ABOUT PARKS.—The South Park Commissioners of Chicago have refused further appropriations for keeping up the Botanic Gardens, for the reason as stated that these

grounds made no show for the expense incurred. As though, an Arboretum, or a system of botanic specimens intended to illustrate the botany of a country, or the world, was expected to make a display merely to catch the eye. In consequence, the work already done and the specimens on hand will be lost. The decision of the Commissioners is meeting with general reprehension, especially since the amount of money spent has been comparatively small, mere nothing in comparison to the immense sums of money spent in making drives in the parks, of advantage only to those who can afford to drive their splendid equipages. It is to be hoped the Commission will reconsider their decision, although much damage has already taken place. The English people are not so much afraid of expense where real utility is to be gained. The Kew Botanic Gardens and grounds of England, cost yearly \$113,000, while only \$170,000 is yearly expended on St. James Green and Hyde Parks. These are respectively the finest of their kinds in the world. The expense of keeping up some other noted public grounds in England is as follows: Regent's Park, \$50,000; Victoria Park, \$40,000; Kensington Gardens, \$30,000; Richmond Park, \$14,000; Hampton Court Grounds, \$10,000, and Hampton Court Park, \$4,700.—*Prairie Farmer*.

SCRAPS AND QUERIES.

RHODODENDRON BORER.—With a badly bored stem of a Rhododendron, a Philadelphia correspondent sends the following note:

"Can anything be done to prevent an insect from killing the branches of the Azaleas and Rhododendrons? I enclose you a bit of the wood. Even those in pots have suffered."

RESTORING DEAD SEEDS.—Miss B. writes: "Let me relate my experience. Three years ago I gathered some seeds of Golden Pyrethrum, and planted half the next spring. Not one came up. I supposed they were not ripe. Yet unwilling to give up trying for the beautiful plant, the following spring, more than a year after they were gathered, I planted the remainder of the seeds, and sprinkled the earth with camphor-water. They all came up. Slips which have traveled thousands of miles, and apparently have no vitality, when soaked in camphor-water grow green and fresh."

ANGULLULA RADICOLA.—R. M., Emporia, Kan., writes: "I am troubled with a kind of knot or excrescence growing on the roots of plants, causing me great loss. It is not confined to any particular kind, but has injured Heliotrope, Begonia, Sedum, Solanum, &c.

"I submitted specimens to Prof. C. V. Riley, and he pronounced it the result of the work of a nematoid worm, closely allied to, if not identical with, *Angullula radicola*." He tells me that you have been troubled with it, but does not seem to know any remedy for it other than to advise the destruction of the infected plants and soil.

"If you have had trouble from this source, have you found any application that would check its ravages? It seems to me that such applications as have been found beneficial in cases of grape-vines affected by phylloxera vestatrix would prove beneficial. I should be pleased to have your experience and opinion as to the best treatment for the disease." [Allusion is here made to the insect on the roots of the violet, to which much reference was made in our last year's volume. If any of our readers who suffered so badly from the insect, have found any remedy, we should be glad to know.—Ed. G. M.]

LITERATURE, TRAVELS and PERSONAL NOTES.

COMMUNICATIONS.

LAWS AGAINST THE YELLOWS.

BY PROF. W. T. BEAL, LANSING, MICH.

In speaking of the last report of the Michigan State Pomological Society, the editor refers to the law in our State preventing the spread of

the yellows in the peach. The law was not made universal to apply to all counties of the State. For example, the people of Berrien county were so much opposed to the law that it could not be passed unless that county (and others) were exempt. The yellows was then quite common in Berrien county. The people would not attempt to prevent it by cutting out the dis-

eased trees. The yellows have conquered, and sound peaches in that county are very scarce articles.

In Van Buren county, as an example, the people cut out the diseased trees. Mr. Dyckman, who has sixty acres of peaches at South Haven, took out about fifty trees last year and about the same this year. The Horticultural Society of that place has a committee to look after the yellows. Those engaged in raising fruit as their chief business understand the law, and are ready and willing to live up to it without any notification by the committee referred to.

There are some farmers in the outskirts of the peach region who need watching. They all yield to the request of the committee when called on to cut out the trees. If they are likely to be slow, the committee take along an axe and do the work themselves, at once. The law is well enforced, so far as I can learn, in the counties which wanted the law and which obtained its passage. They believe that the execution of the law is their only hope for a peach crop—that without this thinning process all must soon yield to the yellows. Some others, as I heard say in Berrien county, believe that in a short time the yellows will overcome all opposition in South Haven and other places where they remove diseased trees.

PLANT PROTECTION.

BY EUGENE GLEN, ROCHESTER, N. Y.

As all understand, a patent gives to an inventor and his assigns the exclusive right of making, using and selling the patented article for a term of years specified in the letters patent. If corresponding rights and privileges were extended to an originator of a new variety in horticulture, they would secure to him and his representatives the exclusive right of propagating, selling and planting for fruitage or flowering trees or plants of his variety for the time fixed by law, regardless of the *name* under which such variety might be propagated, sold or planted. Hence, though a man might buy a tree in entire ignorance of the fact that it was of a patented variety, if upon its fruiting it proved to be such, he would have to pay the patentee his own price for a waiver of his right, or lose the tree, and be subject to all the pains and penalties or the patent law. This feature of the law, taken in connection with the fact that as to most varieties it is quite impossible for even the most experienced nurseryman to distinguish them with certainty in advance of

fruitage, would undoubtedly create such distrust and anxiety upon the part of would-be planters as to largely decrease rather than stimulate planting. Herein, to my view, lies the one great objection to horticultural patents. They would defeat the very ends sought to be secured by them, for with such chances of trouble, the masses would entirely abstain from buying horticultural goods; and if they did, originators of new articles would derive no income therefrom. The nursery trade would be paralyzed, and before two years had expired there would be a loud and universal cry for the repeal of the law. If it could be shown that a similar objection would lie against the proposed copyrights I should think it fatal to them; but such a result cannot be predicted of the latter, for while a patent follows the article to which it is applied, and reduces both seller and user equally punishable, a copyright acts only on the publisher or seller. Hence any one desiring a copyrighted article may safely buy it, wherever it is offered, without enquiring into the right of the seller to deal in it; and therefore, inasmuch as *buyers could not be prosecuted under the proposed law*, it could not create apprehensions or engender fears of litigation upon the part of planters; hence it could not act as a hindrance to planting. But its effect in this respect would not be merely negative.

We have seen that it would lessen the sale of fraudulently labelled goods by deterring evil disposed persons from attaching copyrighted names to trees, plants and seeds of inferior varieties, but this is not all it would do. Copyrights upon the names of good sorts would become valuable, and it would place the control of these names in the hands of the originators of the respective varieties. They would have the ability, and the preservation of their property, and the copyrights would give them every incentive to see that all who were allowed to use these names respectively were supplied with genuine stock from which to propagate. Hence a copyrighted name attached to a tree or plant would become in a great degree a symbol of its genuineness. This would weaken the prejudices of those who now abstain from planting through fear of getting spurious trees; and as the possibility of obtaining a valuable copyright would stimulate experiments in artificial hybridizing, and thus improve the varieties of fruit and flowers open to cultivation, it cannot be doubted that the proposed law would naturally add to the interest taken in these branches of industry.

The objection has been suggested that under the operation of the proposed law much embarrassing litigation would result from the difficulty in distinguishing between different varieties at the time of sale, and this would be eminently true of horticultural patent law; but as the only possible contingency in which this question could arise under the copyright law, would be when a nurseryman or dealer claiming that a copyrighted name had been fraudulently applied to an old sort, persisted in selling such sort under the *new* or copyrighted name rather than the *old* or free name. This objection can never become formidable. All copyrights would be presumptively valid, and nurserymen would not make use of such names without authority, unless the evidence that they were a fraud upon the law was clear. If otherwise, theirs would not be cases for sympathy.

In discussing this subject in your columns, I have paid less attention to showing the importance of adopting some measure as a means of encouraging hybridizations, and thus securing new and improved varieties, than I otherwise would, for the reason that it has seemed to me certain that all must recognize the fact that there is now really no encouragement to this work, and without it we cannot hope to have such varieties. A single illustration of this point will suffice. Mr. James A. Ricketts, of Newburgh, N. Y., as the result of thousands of experiments, has produced quite a large number of varieties of grapes, which are said to promise better than any sorts now before the public; but the fact that he cannot transfer to purchasers of the stock of the respective varieties even the most limited protection in the sale of vines thereof, has not only prevented him from realizing an adequate return for his outlay of money, time and skill, but it has, thus far, deprived the public of the benefit of varieties which may prove much superior to any now open to its choice. To extricate both parties from this dilemma, the dangerous precedent of asking Congress to buy the stock of these varieties and disseminate them through the Agricultural Department, has been proposed. The inevitable result of doing this would be, that thereafter Congress would be asked to buy the stock of every seedling which even the originator thereof might think valuable; and before the Agricultural Department could propagate Mr. Ricketts' sorts to an extent that would enable it to supply a tithe of those desiring them, the country would be flooded with spurious vines

through the scoundrels in the trade to whom I have adverted.

A single question of interest to the general public remains to be considered. Will the proposed law give additional currency to inferior or worthless varieties? Feeling confident not only that it will not do this, but that it will render the introduction and sale of such sorts much more difficult than it now is, I will make this feature the subject of another and closing communication.

EDITORIAL NOTES.

EUROPEAN NOTES BY THE EDITOR, No. 5.—At Combe Wood, in Surrey, is the tree nursery of Messrs. J. Veitch & Sons, of London. It is a pretty rolling piece of ground, with hills for those trees that love to be above others, and deep peat beds in the lower parts for "American" shrubs, and such as love the shelter and rich soil of the valleys. It is remarkable how much better the plants of our country do here than at home; but I should not say plants, for it is only the evergreens. The deciduous trees do better here than in England, though most of them do well enough on the whole. It was a great treat to find here many of our own plants, but which we seldom see, because so few nurserymen in comparatively new countries have the encouragement to keep novelties as they have in older ones. Here for the first time I saw living plants under culture of the *Fremontia Californica*, a very beautiful shrub with orange colored flowers. When I say that this is allied to the *Althea*, it is botanically true, but yet it will give no correct idea of the real appearance of the plant. Of the many things new or old that I saw here, I think few things were more beautiful than the blood leaved Beech, trained as pyramids. Clothed with branches to the ground, few trees could surpass it. Here are some newer colored leaved things, however, that will make their way. A blood-leaved Norway Maple, *Acer Schweidleri*, and the Golden Cottonwood, are surely of this number. Much attention is given to variegated, silver and gold, coniferæ especially of cypress, arbor vitæ, and allies. To my taste they are not remarkable, but in England there seems to be quite a "rage" for these sort of novelties, and the nurserymen have therefore to keep immense stocks of them. I fancy, however, that it is the terribly long Latin names given to these varie-

ties that chiefly attract. Roses were immensely grown. They were then in the budding season, and expected to finish 60,000 before the season closed. Most of the stocks are of the Dog Rose, though I saw a block of about 4,000 Mannettis waiting to be manipulated. The part more exclusively devoted to evergreens occupied about 56 acres. Here, as in most first-class places, much attention is given to making fine specimens by trimming, and in keeping them in honest condition for customers by frequent transplanting. Some of the rarer kinds were especially beautiful to behold. What would our readers think to see in an American nursery numerous specimens of *Sciadopitys* six feet high, *Retinospora lycopodoides* five feet, and a beautiful thing it is, every inch of it! *Retinospora filicoides* five feet; *Juniperus chinensis aurea*, four feet; *Picea Alcoquiana*, five feet; *Prunoptys elegans*, the new Japan yew, three feet; the Washington yew, six feet; and so on of numerous others. "But how about the prices?" Well, away up in the guineas; but we will not talk about that to-day. I had the pleasure here of Mr. Court's company, who is the well-known American traveler for the firm, and it seemed like being with some one from home.

It is not my purpose to go into detail in these hasty sketches. I will only say that I found a much greater trade in hardy perennial, rock, and permanent flowers, generally, than I supposed; a much larger trade in Orchids and rarer palms and leaf plants; a very great trade in Evergreens; a comparatively limited sale for deciduous trees, except of the few English native trees, as Oak, Elm, and Ash; and in comparison with what we in America do, very little business in the beautiful flowering shrubs. Once in awhile there seems a run on some few items. In improved Clematises thousands on thousands are sold. In fruit trees our people would say that there was nothing done. The most showy articles in this line would generally be peaches for growing on walls or in houses. These seem always grafted on plum stocks; and as they grow in the nurseries, light sticks are placed to make the trees grow fan-shaped. A peach tree nursery here looks more like one of our vineyards with these stakes in every direction. Apples and pears, however, are often met with in orchards of an acre or two; but I must say that in no instance did I see trees which on the average were near equal to the average of our American trees in health and beauty. And this

was true also of the orchards of the northwest of France; and I have no hesitation in saying that while we are far behind the people of these two countries in the knowledge of many branches of gardening; in all that pertains to fruit culture we are a very long way ahead. The cherry seems to be much more popular in France than I supposed. Orchards of immense extent abound in every direction within a hundred miles of Paris; but I was surprised to find very few of what we suppose to be "fine French varieties" at all extensively grown.

But I will again step back to London once more, for I was anxious to spend a day or two in wandering about alone over the spot where I was born, and about which the first four years of my life were spent. I traveled along the same road over which Johnny Gilpin in times long gone took his famous ride. I went from town to town—for here in this miniature world of England you can get through a dozen of them in a day,—trying to recall some one spot. But the great one, the deepest seated in my childhood's memory, I once thought I had found. I had been toddling along the road side of a market-garden, and the raspberries hung temptingly from their prickly boughs. The hawthorn hedge had no terrors for me. I crawled through, but the ogre in charge saw me and gave chase, but alas! a stump caught my apron string, and I was held fast until justice caught me; and I was made to "remember coming in there as long as I lived." As I thought I recognized this spot, I inquired whose that quaint old house might be? and was told Mr. Shirley Hibberd lived there. It was near the "Seven Sisters," and though this revealed to me that I was a good long distance from the location of my early adventure, it was just as well with me, for Mr. Hibberd is a brother editor, as every one who reads the *Gardener's Magazine*, as many in America do, very well know Mr. Hibberd is well known for his devotion to hollies and ivies; and as I entered the carriage gate the profusion of these two beautiful evergreens testified that I was truly informed as to who their owner was. But the front steps told as well that I was at the house of the author of "Homes of Taste;" for a more beautiful sight I never beheld. Quite a number of steps lead to the front door, but on each side was a bank of zonal geraniums, scarlet, white, pink, all in full flower. They were grown in pots, and so arranged on each side that they seemed living balustrades. I was fortunate

enough to find Mr. Hibberd at home, and we had a right good "old" time for it was to Mr. Hibberd's magazine, then the *Floricultural Cabinet*, that I paid my first horticultural subscription to *forty years ago*, and to whose pages I made my first horticultural contribution, showing how to raise "double stock gillies," nearly as long back as my subscription dated. Mr. Hibberd's strong point seems to be a thorough love of the beautiful in nature, and a taste for that more cultivated intelligence which can throw a charm around the common things. In my wanderings among the horticulturists I found his *Magazine* almost everywhere, showing that it was very extensively read. The few hours I spent with Mr. Hibberd ended a very pleasant day. The Horticultural, or as they are justly more proud of saying, the Gardening press of England, is a great power. On the tables of the most intelligent, although you might not anticipate any gardening proclivities, you may not be surprised to see the *Gardener's Chronicle*, of which Dr. M. T. Masters is the editor-in-chief. Being somewhat of an "onrestless person," as a good darkey in Mississippi once told me, I was always out when the good doctor did me the honor to call at my hotel, while it was my misfortune never to catch him in; and I am sorry to feel that I failed to master all the ins and outs of London, but I hope for better success another time. The *Journal of Horticulture*, another excellent paper, edited by Dr. Hogg, is also doing good work, but this also I failed to get a chance to hear of by word of mouth. I was more fortunate with the *Garden*, for in my determination to study Covent Garden Market to perfection, I had taken my hotel almost over it, so that I could see all from my bed-chamber, and it chanced to be right near the *Garden* office. This is a large three story building, occupied wholly by the business of the *Magazine*, and, if I remember rightly, owned by the editor Robinson. The success of the *Garden* has been wonderful. It was started at a time when it was thought there was no room for more; but it had its own specialty, and kept to its own path, and has more than fulfilled its projector's desires. The colored plates in connection with a weekly work, is an effort of great magnitude. One hundred have already been issued. But besides the great labor attendant on editing the *Garden*, Mr. Robinson is continually at work preparing new matter for new editions of "Parks and Pleasure Gardens," "Hardy Flowers," "Alpine Plants," and other books of which he is

the author. All these papers have excellent assistant editors attached to them, whose acquaintance it was a pleasure to make. Indeed I do not know of greater profit to me on my whole jaunt than the little time I was able to enjoy with my newspaper friends.

OUR LAST VOLUME.—We have many compliments on the beauty of our colored plate, which we gave as a frontispiece for our last volume. We appreciate these compliments the more because it was not part of the original programme of the magazine, and is regarded by the publisher as a free gift over and above the regular subscription price, his motto being not to promise much and do little, but rather to do more than he promises. How much has been done for a comparatively small subscription price, the very full index, given in our last, shows. To still be up with the times, the MONTHLY appears this month in an entirely new dress, which, we think, will be appreciated. The new arrangements may perhaps delay by a day or two its usual prompt appearance, which we hope will be excused "for this one" only.

VALUE OF A HORTICULTURAL PAPER.—People often say to themselves, "I hardly know what benefit a horticultural paper is to me," but like the air and sunlight, we get innumerable blessings we are hardly conscious of. In England they have a Gardener's Benevolent Institution to care for poor old gardeners who are unable to help themselves; and the singular fact has recently been developed that of every thousand whom the society has assisted 943 never subscribed a cent to a horticultural paper. It is clear, therefore, that it is not being extravagant on horticultural literature that will ever send a man to the poor house.

PATENTING NEW FRUITS.—The idea so persistently urged for so many years that fruit trees, flowers and vegetables, should be patented does not seem to have many advocates now since we showed how impossible it was that any official at Washington could possibly decide one fruit from another. Since then a new plan is urged, that only the *name* be patented or protected. Thus, a man pretending to sell Concord grapes would have to show that he had a right to sell grapes called Concord grapes. Every fair-minded man desires that those whose luck or whose skill improves our gardens should be well rewarded, and which is seldom the case now. We are giving a

series of papers by Mr. Glen on the newer suggestions, without endorsing them, but asking for them the consideration which the importance of the subject demands. Mr. Glen has no more interest in this matter than any other horticulturist; and whether his views shall be found practical or not, he should have everybody's thanks for the thought and work he is giving the subject.

BUSINESS AND PLEASURE.—Most persons know that the editor has no relation to the advertisements, or to any business matter. On all these affairs letters should be addressed to Mr. Chas. H. Marot. When people write to the editor to notice this or that advertisement, it is time and labor thrown away, for he does not see the advertisements until the magazine is issued. Occasional letters make this notice necessary. The publisher looks after the business; the editor the pleasure of the concern.

MIXING UP ENGLISH NAMES.—The *Gardener's Chronicle*, in speaking of the confusion among English names of plants, mentions over two dozen distinct plants to which the name lily is applied, which do not belong to the genus *Lilium* of botanists; and among these we may mention, as samples, the "wild lily," which is a *Convolvulus*; African lily, which is an *Agapanthus*; Guernsey lily, which is a *Nerine*; lent lily, which is a *Narcissus*; St. Bruno's lily, which is an *Anthericum*; lily of the valley, which is a *Convallaria*; day lily, which is a *Heemerocallis*. Others might be added. And yet they give us a friendly nudge once in a while because, our people call all trailing plants "vines; while in Europe only the grape is the vine.

REMARKS ON INSECTS, by Prof. C. V. Riley.—We have on our table, the "Proceedings of the Academy of Sciences of St. Louis, with Accounts of Various Entomological Discoveries, by Prof. Riley." There is an account of the larval habits of the Blister Beetles, about which nothing much has been known. Also a new beetle, very troublesome to bee-keepers. This has been dedicated to Philadelphia's distinguished entomologist, Dr. Horn, and is named *Hornia minutipennis*. Mr. Riley also defends himself from an attack on some of his statements about the yucca moth. There is no doubt but yucca is never fertilized or produces seed except by the aid of the yucca

moth. Much of what appears in the papers in regard to the action of insects on flowers is pure speculation; but this discovery of Mr. Riley's is unquestionably true, and is the result of careful observation, and we class it as one of the great discoveries of the age. Those who undertake to dispute with Prof. Riley on this fact will undoubtedly get the worst of it, and we suspect the writer whom Riley has here paid his respects to is somewhat of this opinion by this time.

VALUABLE BOOKS FOR SALE.—Mr. R. H. Rathbun, South Amboy, N. J., offers for sale a set of Paxton's Magazine of Botany, and DeCandolle's *Prodromus*. "It is not easy to get these sets, and yet they are of inestimable value. No horticultural library, horticultural editorial rooms, or places where horticultural references are to be made, can well afford to be without them.

THE FARMER'S MAGAZINE.—Our old correspondent, W. Duncan, whose association with the *Farmer's Home Journal*, of Louisville, was so favorably known, has started a new magazine, as above named. The first number is before us, and has a very varied and extensive table of contents.

Music from T. W. Helmick, Cincinnati, "Pretty Little Blue-Eyed Stranger," is among the books and exchanges on our table.

SCRAPS AND QUERIES.

SHITTIM WOOD.—A lady from Ohio sends us some leaves of *Bumelia lycoides*, and the following letter, which we give because it has an interest, though the true shittim wood was most likely *Acacia Farnesiana*, which is by no means extinct:

"Have you ever become interested in the discussion concerning the identity of the Biblical shittim wood? Some claim that the tree was a sort of acacia and others a laurel. Still others believe it to have been an evergreen, and all agree that the species is non-extinct. The question is a peculiarly interesting one to me since I have for a dozen years been acquainted with a tree in the Neosho Valley, Kansas, called shittim wood, and believed to be identical with the shittim of the Bible. I enclose some of the

leaves, which you will see closely resemble laurel. But contrary to the habit of other laurels the leaves color in December, yellow and red, and hang on until the sap starts in the Spring. The branches are slender, tortuous, thorny, and of that peculiar toughness of fibre which marks the Acacia family. Any one seeing a branch destitute of leaves would pronounce it an acacia. Yet it bears black berries like the laurel, called ink-berry in Massachusetts. It is a remarkably slow growing tree, no appreciable

difference having been marked in its size during the fifty years which it has been known, and that in a land noted for its rapid and gigantic growths. It is a small tree with wood as hard as iron, in a country where these qualities are exceptional. This one of which I speak is believed to be the last one of its kind in the world, at least it is so far as I know, unique. Have you ever seen anything of the sort, and are the settlers in the Neosho Valley wrong in their veneration for it? What do you call it?"

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

ADDRESS OF MARSHALL P. WILDER.

(Continued from page 380.)

Such are some of the statistics which I have been able to gather, but it is hoped that the response of our own Vice-Presidents to our circular will make the report of our resources more complete.

In view of the wonderful progress which has already been made, we begin to realize the great importance of American Pomology, nor should we forget, as among the great benefits of fruit culture, the employment of thousands of men, women and children, or the immense amounts paid for freight on fruits to railroads, steamboats, etc., and the profits to dealers.

But who can estimate the amazing quantities of fruits that are to be produced on this continent, when the lands suited to fruit culture are brought into use! Look at the vast amount of these in the eastern slope of our country, and still more wonderful, the land on the Pacific slope. Of these, California alone has a territory 800 miles in length and 200 in breadth—three times as large as all of the New England States—four times as large as the State of New York or Pennsylvania, having millions of acres for fruit cultivation.

THE INTRODUCTION AND DISSEMINATION OF NEW AND VALUABLE AMERICAN FRUITS.

The introduction of new American varieties from seed, adapted to all sections of our vast territory, not only in itself, but as incentives to further progress, cannot be overrated. To this, more than to any other cause, are we indebted for the rapid progress of American Pomology. Fruits of foreign origin, although of great value in certain sections of our country, have not as a

rule yielded such favorable results as those selected from our new and improved native fruits. By this means we have not only introduced new varieties, adapted to every section of our country, but varieties which have prolonged the season of fruits in some sections, either by early or late kinds, for one or more months. Especially is this to be seen in the peach, grape and strawberry, so that many of our markets are supplied for a much longer period than ever before.

By the introduction of early peaches, the season for this fruit has been advanced nearly a month. In South Carolina and Georgia shipments have been made this year to northern markets as early as May 25th. Similar illustrations might be given of the prolongation of the season of the strawberry, the grape, and the pear, in our markets; those of the north being now supplied with the strawberry from the first of May to the middle of July; and with the grape and the pear from the first of July until April or May. And why may not those who have the means, supply their tables with fruits in some form through the year? Some of us already enjoy this luxury, beginning with the strawberry and following in succession with the other small fruits, the grape, the pear, and the apple, thus furnishing a circle of fruits which delights the eye, gratifies the taste, improves the health, and crowns our daily meals throughout the year.

California seems to be the most favored spot on earth for the production of new varieties of fruits, if we may judge by such pears as the Fox, Barry, Wilder and others, raised from seed by Mr. Fox, our Vice-President from that State. If his success should be taken as a criterion, and these fruits should prove adapted to other climes, that State alone can supply the world

with improved varieties, not only of the pear but of other fruits. Matured as the seed is in the warm, dry Summers and Autumns of California, we have reason to hope for great vigor and hardiness.

Great advances have been made in the improvement of our wild fruits, such as are seen in the varieties of the Chickasaw and Wild Goose Plum, of which these are types, and the new varieties of grapes for the South, from which regular and profitable results are obtained where none were before. In this connection we may also mention the crab apple, which, though not indigenous, has furnished, in its improved varieties and hybrids, fruit of the greatest value for the extreme north.

IMPROVEMENT IN PACKING AND TRANSPORTATION.

Much of our progress in pomology and horticulture is due to the increase of facilities for transportation afforded by railroads and steamboats. Especially is this the case in Southern and Western States, and California. These railroad and steamboat facilities have induced fruit growers to increase their products, being assured they would arrive in good condition in distant markets. But these improvements in transportation would have been of but little advantage had they not been supplemented by careful packing. Steamers and cars are now provided with large refrigerators, by which delicate fruits can be sent long distances, even to Europe. The various styles of fruit packages, every class of fruit being provided with one suited to its character, are wonders of cheapness and efficiency. The obstacles with which we formerly had to contend have been mostly removed, so that fruits can be sent safely to very distant markets, where it was impossible to send them ten or fifteen years ago. This increased supply has increased consumption and caused a corresponding decrease in prices. It has made fruit almost a necessary portion of our daily meals, thus largely fostering its production. The packing of trees has also received more attention than formerly. Experience has taught us much on this point, especially in adapting it to the character of the voyage and the climate through which the trees are to pass. Thus trees shipped by our friends, Ellwanger & Barry, to Australia, after a voyage of fifteen thousand miles and being one hundred and fifty-three days on the way, were received in safe condition. Only three trees out of one hundred and sixty were dead.

In this connection I desire to impress on the packers and shippers of fruit to foreign lands, since our best American apples have sold in London at much higher prices than English and French apples, the great importance of especial vigilance in seeing that no inferior fruit ever crosses the ocean, thus preserving the integrity of our fruit growers and dealers, and the reputation of our nation for the superiority of our fruits.

England esteems American apples beyond all others. As long ago as 1773, when the crop of apples had failed the previous year, English importations from this country had been made and were highly appreciated. In a letter from Michael Collinson to John Bartram, of Philadelphia, he writes as follows:—"Your American apples have been an admirable substitute this season, some of our merchants having imported great quantities of them. They are, notwithstanding, too expensive for common eating, being sold for two pence, three pence, and even four pence an apple. But their flavor is much superior to anything we can pretend to, and I think even superior to the apples of Italy."

(To be continued.)

MASSACHUSETTS HORTICULTURAL SOCIETY.
DEATH OF THOMAS RIVERS.—The decease of this eminent horticulturist, well known to our readers as the author of the *Miniature Fruit Garden*, was announced too late for our last number. We had prepared a brief notice, but give place to the following, which we take from the proceedings of the Massachusetts Horticultural Society, on December 1st:

President Parkman announced as the first business before the meeting, resolutions in memory of Thomas Rivers, of Sawbridgeworth, England, one of the most eminent horticulturists and pomologists, which would be appropriately presented by Hon. Marshall P. Wilder, the foremost American pomologist.

"Mr. Wilder said: "Mr. President, I thank you for suspending the usual order of business, that we may render proper honor to the memory of one of the oldest and most respectable corresponding members of the society. I am advised by the memorial card which I hold in my hand, that Thomas Rivers died at his residence, Sawbridgeworth, England, October 17, 1877, aged seventy-nine years. It has been my privilege to have a personal acquaintance and correspondence with Mr. Rivers for nearly fifty years. He

was one of the most eminent horticulturists of the age. As a nurseryman, pomologist, tree and rose grower—especially as a hybridizer, in the production and dissemination of new and choice varieties—his name will long be remembered with veneration, gratitude and respect. For nearly sixty years he was actively engaged in the nursery business, and it can be said with truth, that no man in all Europe ever maintained a higher character for fidelity and integrity. As a pomologist he will be remembered for generations to come, especially for the production of new and valuable fruits for seed, which exercised a fascination over him, as he said, 'growing with his growth and strengthening with his decline.' As a raiser and introducer of new fruits, the editor of the *London Gardener's Chronicle* (than which there is no higher authority) said of him, 'The name of Thomas Rivers stands preëminent. We have had no English pomologist to compare with him in this department, if we except Thomas Andrew Knight.' The same paper gives a list of more than seventy new varieties of fruit raised and sent out by him. Mr. Rivers considered as one of his greatest triumphs the production of early peaches, by which the season is extended for several weeks, and which are now distributed throughout the fruit-growing world.

"As a lover of the rose, and the great leader in its improvement in Engiand, his name will be embalmèd in the hearts of grateful millions, while the rose shall unfold its petals to the morning light, or shed its fragrance on the passing breeze. Of his love and devotion to the rose, an author remarks, 'Age cannot wither his loyalty, and beneath a hundred medals, orders and clasps, his brave heart is still with the rose.' His catalogue of roses, published forty-four years ago, was pronounced by Mr. Loudon 'the most useful catalogue of roses in the English language.' Besides writing many excellent practical works on horticulture, Mr. Rivers has been for many years a large contributor to the periodical press, and his various books and papers on the rose, the pear, root-pruning, double-grafting, the construction of orchard houses and other cheap protections against the uncertainties of an English climate, and other subjects, are among the most valuable contributions to horticultural literature. But, Mr. President, time would fail me, were I to enumerate the various ways in which Mr. Rivers' name has been associated with the progress of rural economy and the hor-

ticulture of the world. Truly it may be said of him, 'His works do follow him.' His books are the best record of his life.

"In view of what I have said, I beg the privilege of presenting the following resolutions:

"Resolved, That in the death of Thomas Rivers, one of the oldest and most respected corresponding members of this society, we recognize, in common with the horticultural world, the loss of a friend of horticultural science, rural improvement and ornamental culture, and a benefactor of our race.

"Resolved, That while we deplore the loss of so useful a man, we desire to thank the Supreme Disposer of all events that he was spared to us for so long a course of years, and was at last gathered to his fathers 'like a shock of corn fully ripe in its season.'

"Resolved, That the members of this society sympathize sincerely with the bereaved family in their affliction, and that a copy of these proceedings be forwarded to Mrs. Rivers as a token of the respect and esteem in which her late husband was held in America."

W. C. Strong, James Cruikshanks, and President Parkman spoke to the resolutions, which were unanimously adopted.

SOUTH CAROLINA STATE HORTICULTURAL SOCIETY.—Following in the wake of the Georgia State Horticultural Society, which under the care of Mr. P. J. Berckmans established a society a few years ago, South Carolina has now founded one which promises a large and useful career.

Hon. R. M. Sims has been the active spirit. The Editor of the *GARDENER'S MONTHLY* acknowledges the honor of election to corresponding membership, of which he has been informed in a very graceful letter from the Secretary, Dr. Otto A. Moses.

THE PENNSYLVANIA HORTICULTURAL SOCIETY.—This, the oldest Horticultural Society at present existing in the United States, passed its fiftieth birthday on the 21st of December, and the occasion was taken to have a happy re-union of the members.

Three of the originators are still living, David Landreth, and Jeremiah and Moses Brown. The former still continues at the head of the great seed firm of that name, as active as many a younger man, and the last named still rides around enjoying the numerous beautiful hemlock hedges about Philadelphia, of which he is in a measure the father.

THE
GARDENER'S MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

Vol. XX.

FEBRUARY, 1878.

Number 230.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

In many parts where our magazine goes it will be necessary to bring up the preliminaries for active spring work.

Many delay pruning shrubbery until after severe weather passes, so as to see what injury may be done—but with March all should be finished—taking care not to trim severely such shrubs as flower out of last year's wood, as for instance, the *Wiegela*—while such as flower from the spring growth, as the *Althæa*, *Mock Orange*, &c., are benefitted by cutting back vigorously.

Those which flower from young wood, cut in severely to make new growth vigorous. Tea, China, Bourbon and *Noisette* roses are of this class. What are called annual flowering roses, as *Prairie Queen* and so on, require much of last year's wood to make a good show of flowers. Hence, with these, thin out weak wood, and leave all the stronger.

To make handsome, shapely specimens of shrubs, cut them now into the forms you want, and keep them so by pulling out all shoots that grow stronger than the others during the summer season.

Graft trees or shrubs where changed sorts are desirable. Any lady can graft. Cleft grafting is the easiest. Split the stock, cut the scion like a wedge, insert in the split, so that the bark of the stock and scion meets; tie a little bast bark around it, and cover with *Trowbridge's* grafting wax, and all is done: very simple when it is understood, and not hard to understand.

If flowers have been growing in the ground for many years, new soil does wonders. Rich manure makes plants grow, but they do not always flower well with vigorous growth. If new soil cannot be had, a wheelbarrow of manure to about every fifty square feet will be enough. If the garden earth looks grey or yellow, rotten leaves—quite rotten leaves—will improve it. If heavy, add sand. If very sandy, add salt—about half pint to fifty square feet. If very black or rich from previous year's manurings, use a little lime, about a pint, slacked, to fifty square feet.

If the garden be full of hardy perennial flowers, do not dig it, but use a fork, and that not deeply.

Dig garden ground only when the soil is warm and dry. Do not be in a hurry, or you may get behind. When a clot of earth will crush to powder as you tread on it, it is time to dig—not before.

If perennial plants have stood three years in one place, separate the stools, replanting one-third, and give the balance to your neighbor who has none.

Box edgings lay well now. Make the ground firm and level, plant deep, with tops not more than two inches above ground.

Roll the grass well before the softness of a thaw goes away. It makes all smooth and level.

In planting trees remember our repeated advice to use the pruning knife freely.

We would again repeat a suggestion we recently made in regard to rustic summer houses. They can often be very cheaply made. In our country they should be open on all sides.

Here is an old tree turned into a rustic seat. In this case we would strip the bark off, as



well as open the soil about the collar of the tree, and tar well to preserve it from rotting there.

COMMUNICATIONS.

HOW BEDDING-PLANTS MAY BE ARRANGED.

BY C. G. BJORKLUND, NORFOLK, VA.

Regular Flower-beds.—Figure 3 represents what we may call "regular flower-beds." Should lie 3 to 5 feet from the walks, and there might



Fig. 3.

be a continuance of these on both sides of a straight walk, with every other to be a circle, or either circle or the rounded parallelograms may be placed singly wherever a flower-bed is desired. It is not necessary, as in the old German style, that flower-beds of same shape, etc., must lay opposite each other. The circle 2 is supposed to be ten feet in diameter, and will do first-rate for solid beds of *Coleus* (strictly only one variety), tri-colored *Geraniums* and *Achyranthus*. The *Coleuses* should be trimmed all the time, or they will not stand the Fall wind and rain. My practice is to take one joint above another from time to time, and to keep

the beds in about the same convexed shape as the soil of the bed represents when raked; and the same with the *Achyranthus*. The tri-colored *Geraniums*, though beautiful some of them are, seem to defy our endeavor to make anything solid of them, from the fact that their growth during the hot season is so very feeble; but let us modify this defect by planting something between them, such as *Viola cornuta* or *Verbenas*. Annie.

For the parallelograms, 1, 1, 7×15, we have in the first place the *Geraniums*, but do not take pride in having many varieties. If there are fifty beds to be filled with only *Geraniums*, it is better to have four kinds of the choicest than a score not fit for bedding. General Grant is the best as a bright scarlet, being moderate in growth, and giving abundant flowers through the season, if due attention be paid to watering and cutting away of the seeds. Then there is *Lucius*, orange scarlet; *Master Christine*, pink and white, and *Princess*, white. With the exception of *Asa Gray* and a couple of others, there is hardly any double *Geranium* that does tolerably for bedding. Other plants for these beds are *Shrubby Calceolarias*, *Salvias*, *Begonias*, *Heliotropes*, and *Vinca alba* and *rosea*. In some places it is the custom to border these plants with one or two ribbon plants, but let us keep them for the ribbon beds, and use one kind for each; it will make them look larger.

Roses, Dahlias and *Gladioluses* may be planted on beds of any shape 5 to 10 feet from the walks; but my experience here (on the

37th latitude) makes me suggest that we in the South had better plant every other row or circle on the *Gladiolus* beds a month or so later than the first set, in order to prolong the time of blooming, or that will be over too soon, and make the bed an empty spot on the ground.

ALPINE PLANTS.

BY MR. A. VEITCH, NEW HAVEN, CONN.

In the strict sense, Alpine plants are such as grow in latitudes ranging from the greatest elevation, or perpetual snow line towards the equator, to less elevated situations near the

poles. Thus it is on the Andes and Himalayas, at an elevation of from 12,000 to 15,000 feet a similar flora exists, and many species are identical with those found in Central Europe at not more than 4,000 to 6,000 feet elevation. And these again have an agreement with those of Lapland and Siberia on low mountain ranges, or still farther north at the level of the sea.

But in speaking of a collection of Alpine plants it is not necessary to be confined within such limits as this would impose. At the same time a collection pure and simple from those high latitudes would be of rare value, and embrace many of the most unique and interesting productions in the vegetable kingdom. But no violence could be done, or improper alliances formed, by associating with these as many as are diminutive in size whose natural habitats are the mountains and meadows of more temperate regions. Out of this larger field a fuller collection could be obtained, and the enjoyment of its possession increased in a corresponding degree by the great diversity of forms which it would present; each and every one so distinct and attractive as to keep awake his interest all the year through. When Spring comes, and even before the rigors of Winter have succumbed to gales from the South, which blow softly, there is an awakening in a full collection which tells that in their native homes many flourish and bloom, even up to the skirts of perpetual snow. And thus there is an early beginning to the floral year, which need suffer no abatement on and down to its rounded close.

In getting together such a collection, the first move to be made is to collect as many as might be deemed suitable in the neighborhood of home, and at the same time add to these, as circumstances permit, the most approved varieties of other parts of the country. This would necessitate excursions to the woods, the meadows, and the sea-shore, from all of which places materials could be gathered every way fitted to satisfy the craving of the true naturalist. The South and West also would contribute of their riches; and if what could be got in this way did not suffice, thousands more may be had in Europe at reasonable rates, culled from many of the most interesting families. Primulaceæ alone would make an interesting group, embracing as it does a goodly number of the most beautiful plants in cultivation. Not alone is *Primula* rich in species but *Aretia*, *Androsace*, *Soldanella*, *Cyclamens*, &c., are equally so, and all fitted to fill no mean

place in every collection. Saxifragaceæ, too, as has been well said, "constitute the glory and delight of the cultivator of Alpine Plants." And although inferior to the Primrose family in the beauty of their flowers, they more than rival them in the diversity and evergreen character of their leaves. But any attempt to give a list of all that is worthy cannot be done here, as it would be incomplete without the enumeration of many hundreds; and therefore it would be better for those who wish to embark in the enterprise to communicate with those nurserymen and florists who now happily devote a portion of their time to this most interesting department of plant culture.

In the cultivation of these plants various methods have been resorted to with a fair degree of success. The free-growing varieties do well planted in front lines in herbaceous borders, while the more delicate species do better in pots, when they can be conveniently placed in pits or frames during the Winter months. But for a large proportion of those that are perfectly hardy, small compartments or beds for each species, divided by tile or slate set on edge, and raised several inches above the ground level, is the most satisfactory way of any, as it not only prevents the different sorts from running together, but the beds can be raised above the general level to suit those that delight in dry situations. But whichever method is adopted, care should be taken to supply the various species with a suitable compost in which to grow. And this is not hard of accomplishment, as the overwhelming majority delight in a mixture of peat or leaf mould, loam and sand.

The interest in the collection would be greatly enhanced by the whole being arranged on some intelligible plan; and there is none better, perhaps, than that pointed out in the *Natural System of Botany*. According to this method, all those of a family would be brought together, at once showing their relationships, and also their specific differences. But we have seen fine collections arranged simply in lines according to height, color, and times of flowering, which, when correctly named and properly cared for, afford both pleasure and instruction.

LAWNS.

BY N. F. FLITTON, WAVERLY, MD.

It is conceded on all hands that a good lawn, well kept, is one of those adornments which ought to be more frequently seen.

I wish to offer a few remarks, expressing no new ideas, perhaps, probably nothing of merit and certainly no theory, but drawn from the book of experience, the lessons from which are usually well remembered.

It would, of course, be folly to expect a good lasting sod on land which needs draining; equally so from seeding down poor, stiff clay on land with a southern exposure, where the beams of a tropical sun pour down its fiery rays day after day for two or three months in the year. In preparing ground for a lawn, some prefer to take a crop; but a Summer fallow, with early Fall seeding, is preferable, according to my experience. In the first place, weed seeds can be persuaded into growth more readily by giving the ground a harrowing, as soon as dry enough, after every shower, finishing with a light rolling, which can only be done, of course, when the land is clear of a crop. As to subsoiling, trenching, &c., as a general rule, I care very little to what depth the earth be loosened, provided the rule of keeping the surface soil at the top be rigidly adhered to. The writer has seen land deteriorated as much by subsoiling—that is, by breaking up the subsoil and leaving it in the same place when in improper condition as by bringing it to the surface. Whenever the subsoil breaks up in lumps it is safe to leave it alone as hard pan, and get six inches of surface-soil in thorough condition.

There is a considerable difference of opinion as to the best kinds of grass, the proportion of each, and quantity to use per acre, &c. I sow grass seed, for all purposes, thicker than is usual, and for lawn sow narrowcast, strictly to a mark, twice in a place, and both ways of the ground, using more white clover than many gardeners think necessary. My reason is, white clover can hold its own against most of the stoloniferous grasses as well as against the lawn mower. *Panicum sanguineum* is a troublesome grass in late Summer and early Autumn, and although an annual, manages to increase yearly in almost every lawn where it once gets foothold. Its seed stems go creeping along so near the ground that the lawn mower fails to take the head off. When a lawn is mown with a scythe the seeds of this kind of grass is more likely to be cut off, as the raking up of the cut grass pulls up the heads of stoloniferous grasses. As this makes things appear rather rough, the scythe is brushed over the lawn again, taking off what was before missed, and just what our lawn mowers miss

also. It is possible that we may find on careful examination that our lawns do not deteriorate under the lawn mowers in consequence of their close cutting propensities, but rather because they give those grasses whose stems creep along the ground and emit roots the advantage over their more upright growing congeners. The Winter care of lawns depends on circumstances. It is better to run the risk of putting a little weed seed on the lawn than to forego the benefit of manuring wherever it is considered necessary. Dandelions and plantains must be cut out whenever they appear. The former is easily eradicated in early Spring, just when coming into flower. Of course every one admits the necessity of thoroughly rolling lawns when in proper condition, yet this is much oftener preached than practised. The mower should be put to work as early in the Spring as the grass can be cut, setting to cut very low the first time. If, during the drought of Summer, it becomes necessary to run the machine oftener than would otherwise be desirable on account of some kinds of grass growing faster than others, set it to cut quite high. This gives the grass a more even appearance without exposing the roots so much. Cut the grass so often at all seasons, if possible, that there may never be necessity for taking off anything which is cut.

I have often heard the remark that our lawns will not bear comparison with English lawns. Admitted; but I have seen in Uncle Sam's garden-patch Indian corn, tomatoes, melons, cantaloupes, &c., growing with a wild luxuriance that our English cousins cannot equal even under glass; and I have also seen lawns and pastures get so badly scorched "over the water" as to show that the usual beauty of their lawns was not entirely owing to the skill of the gardener. What most concerns us is to find out what kind of grasses withstand the drought of our Summers. If they happen to be a little coarse we must endeavor to get accustomed to it. It is far more pleasant to look upon a lawn that is green the whole Summer, besides being more comfortable to walk upon, than one which is brown and burnt a considerable part of the season, even if it is not composed of the finer growing grasses.

Now, a word as to lawn mowers: For simplicity, ease of operation and facility for repairs, I have seen nothing equal to the Philadelphia. There are several machines which do good work, and so far as the horse machines go, ease of draught is, perhaps, of less consequence than

with hand mowers. For the accomplishment of the most work in the least time I have found the Philadelphia to excel.

THE DIOSCOREA BATATAS—OR CHINESE POTATO.

BY GENL. NOBLE, BRIDGEPORT, CONN.

The late Wm. R. Prince, of Flushing, in his fanciful advertising style, declared that in the *Dioscorea* "had been discovered the alimentary basis of the Chinese Empire." Whether it fills so vast a space in food product may well be doubted. Rice and chopsticks are generally supposed to furnish a pretty big part of substance to the "heathen Chinese." The plant, however, even in Republican soil, goes for a basis deep down towards the Chinese Empire. I have, in a made soil, dug tubers full three feet long, and in the largest part full four inches in diameter.

The *Dioscorea* is a very toothsome vegetable. Baked or boiled its flesh is white and very delicate; not exactly mealy but much softer and more pulpy than the common potato—in fact, very much of the consistency of the latter, when boiled, mashed, well mixed and buttered, and browned in its dish in an oven. My family and friends consider this immense tuber a great curiosity, and a great treat when cooked.

If one desires a patch, and is not very nice about the order of their coming, he never need plant but once. Thereafter it takes care of the business itself. From either a last year's root left undug, or from some of the little tubers which are strung plentifully along its tendrils, it gives you a crop every year. I have not failed in twenty years of an annual supply without care since my first planting.

The best way is to confine its growth to some deep, rich soil, studded with tall and stout cedar poles. There *Dioscorea* will climb up and festoon from one to another, with the most rampant vigor.

My special purpose, however, in this note, was to mark the peculiar fitness of this plant for many situations and duties as an ornamental climber. It is almost as comely a bloomer as the Madeira vine, and has very much its style of growth and leaf. Its flowers have a most honeyed perfume. But the *Dioscorea* is the more rapid grower, has larger leaves, and stretches out to greater length. Its foliage is larger and darker, and much of it wears a greenish purple hue. I think too it stands the drouth much better.

This climber has the merit over others, that when the season of leaf and bloom have gone, you can get "a good square meal" out of its deep-growing tuber. A relish for the repast is made keen and toothsome by the three-foot shaft, which you must mine along side of the Heathen Chinese, into which to slide the unbroken bulk of his "alimentary basis."

Of late there is a variety of this *Dioscorea* which I have not seen, growing a more rounded tuber at a reasonable depth. Of one or the other kind, I think it would pay all having the room, to try a few plants. On our rich prairie land it would yield and enormous product.

EDITORIAL NOTES.

THE SHADE TREES OF WASHINGTON.—The Parking Commission of the city of Washington, consisting of Messrs. W. R. Smith, Wm. Saunders and John Saul, have planted many miles of streets, and it is conceded to be one of the planting jobs which will challenge competition with any similar task in the United States for low cost and great success. This comes from having men who know what they are doing, and of high personal character, in the management of such things.

Already 40,000 trees have been planted, some thirty kinds being used, the bulk, however, being of ten kinds. These, named in the order they are valued by the commission, are the following: Silver or White Maple (*Acer dasycarpum*), then American Linden (*Tilia Americana*), American Elm (*Ulmus Americana*), Scarlet Maple (*Acer rubrum*), Box Elder (*Negundo aceroides*), Sugar Maple (*Acer saccharinum*), American White Ash (*Fraxinus Americana*), English Sycamore (*Acer Pseudo-Platanus*), Button Ball (*Platanus orientalis*), Tulip Tree (*Liriodendron Tulipifera*), Honey Locust (*Gleditsia triacanthos*), and Norway Maple (*Acer platanoides*).

ROSES ON THE MANETTI STOCK.—Thirty years ago the Manetti Rose was used as a stock to bud the finer roses on. They thrive amazingly for a while, till the numerous suckers had it all their own way, when rose-growers voted it more plague than profit, and it was banished from American gardens. Not one nurseryman in a thousand at this time knows what a Manetti Rose is. But as we threw it out of our gardens, it was found by English rose-growers, and has had a rapid run in England. But at length, as we learn from the *Gardener's Magazine*, they are

tiring of their new-found friend. Already "Own Root Roses" are at a premium.

THE ENGLISH PRIMROSE.—The *Garden* deserves credit for introducing us to a good old friend whom most of us have forgotten—the English Primrose, through a beautiful colored plate, of many pretty varieties—crimson rose, white, and scarlet. In America the difficulty is to keep them well over through dry summer atmosphere. But the good gardener can easily manage this. With very little care they may be made to do well.

AMERICAN TUBEROSES.—These still maintain their great popularity in England, retailing at about \$1.50 per dozen.

NEW OR RARE PLANTS.

RHEUM NOBILE, HOOKER.—Of this remarkable species of rhubarb, till now unknown in our gardens, I am gratified in being in possession of fresh seed for the first time. This is a native of Sikkim, where it was originally found by Dr. Hooker, in whose valuable Himalayan journals it is thus described: "The individual plants of *Rheum nobile* are upwards of a yard high, and form conical towers of the most delicate straw-colored shining semi-transparent concave imbricating bracts, the upper of which have pink edges; the large bright glossy shining green radical leaves, with red petioles and nerves, forming a broad base to the whole. On turning up the bracts the beautiful membranous fragile pink stipules are seen like red tissue paper, and within these again the short branched panicles of insignificant green flowers. The root is very long, often many feet, and winds among the rocks; it is as thick as the arm, and bright yellow inside. After flowering the stem lengthens, the bracts separate one from another, become coarse red-brown, withered and torn; finally, as the fruit ripens they fall away, leaving a ragged-looking stem covered with panicles of deep brown pendulous fruits. In the winter these naked black stems, projecting from the beetling cliffs, or towering above the snow, are in dismal keeping with the surrounding desolation of the season.—*Garden*."

PHILODENDRON AMURENSE.—This interesting hardy tree, made known to our readers through Prof. Sargent, is attracting attention in Europe. Mr. Max Leichtlin, writing to the *Garden*, says: "This, a native of Siberia and Mandeschouria,

is just now a beautiful object in my garden. My specimen of it is about twelve feet in height, and has a tall pyramidal crown of from three to six feet. The form of its foliage, which is deeply lobed, gives it a singular appearance, and the coloration of the leaves, which are bright red, is very fine. It is also all the more valuable on account of its keeping its foliage much longer than other deciduous trees, which hereabouts have shed their leaves a fortnight ago. It has a spongy bark, and is called the Siberian cork-tree."

HIBISCUS (ROSA SINENSIS) ALBO VARIEGATA.—A free-growing and elegantly-marked stove plant, obtained from the Pacific Islands; of a closely branched habit, with pale green stems, and ovate slightly toothed leaves, which are freely mottled and variegated with greyish color and white, breaking out irregularly in a manner similar to the markings of *H. Cooperi*, to which it would form a companion plant, having the variegation white instead of pink. It should be grown in full light, near the glass, to bring out its proper coloring.

H. (ROSA SINENSIS) CARMINATA PERFECTA.—A charming stove plant, in habit resembling *H. rosa sinensis*, recently imported from the South Sea Islands. It has stalked ovate obscurely three lobed leaves which are deeply toothed, and very large flowers, nearly five inches across, with broad and slightly undulated petals, forming a full round flower, of perfect shape, and of a rich soft carmine-rose with a deep crimson eye. The staminal column is very prominent, and adds much to the beauty of the flowers, the column being of a rosy hue, the numerous stamens bright yellow, and the five stigmas a rich velvety crimson.

H. (ROSA SINENSIS) MINIATA SEMI-PLENA.—This remarkably showy stove plant has firm, almost leathery, ovate leaves, which are coarsely toothed, and brilliant flowers of a vermilion-scarlet color, darker towards the base of the petals. The flowers are semi-double, the petals very much waved and recurved, forming an irregular undulated mass four inches across, from which the partially petaloid staminal column projects two inches. The brilliant and attractive flowers are remarkable for the absence of formality, the shape being wild and abounding in fantastic curves, but nevertheless they are remarkably handsome. It has been imported from the South Sea Islands.—*Wm. Bull*.

NEW ESCHOLTZIAS.—The common golden yellow escholtzia, of California, has been so skillfully selected that a race with flowers almost crimson has been produced. A beautiful colored illustration recently appeared in the *Garden*.

GREEN HOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

The best feature of a garden in Winter is a nice greenhouse, filled with healthy plants. They need not be forced flowers, for there are numbers which bloom naturally at this season of the year.

New Holland and Cape plants, such as *Epacris*, *Acacia*, *Heaths*, &c., are now the glory of the greenhouse; hot bursts of sun on them should be avoided, as it lays in them the seed of "consumption," which frequently carries them off the following summer.

Chrysanthemums should now be raised from cuttings for fall flowering. They make better blooming plants than offsets.

Auriculas, *Carnations*, *Pinks*, and *Polyanthus*—the prettiest of florists' flowers must be kept cool, just free from frost, with plenty of air, if best results are desired.

Azaleas succeed well by grafting with the half-ripe shoots of the present season's growth on plants raised either by seeds or cuttings. Old wood does not take readily.

Geraniums, *Pelargoniums*, *Cinerarias*, and *Chinese Primroses*, must be kept as near the glass and light as possible; they do little good in shady places. Keep off the green *Aphis*; for this, on a small scale, there is nothing like hot water; on a large scale, tobacco smoke, in several successive light doses, is still the best remedy.

Camellias will require rather more water while growing than at other times. Just before they grow is a good season to graft. Cut down the stock, cleft graft in the crown, wax, and plunge in a bottom heat of 70°. A great many kinds may be had on one plant by the bottle system—a shoot about to grow is obtained, and attached to the stock as in inarching, the end of the shoot being put in a small phial of water suspended beneath it. This plan does best, however, with half-ripe wood in July.

Pansies are coming now into flower. They like an airy frame, where they will not be roasted in mid-day nor exposed to drying winds, and yet have a free circulation of air and plenty of light. Planted out in such a frame, and the old shoots cut away as soon as the plant has done

flowering, the plants will keep healthy over till the next season. Superior varieties can be raised from seed. Choose those with the roundish petals, best colors, and the first flowers that open, to raise seed from.

Look out for a good stock of bedding plants in time; by striking cuttings of such things as grow rapidly, and sowing seeds of such annuals as may be advanced to advantage.

Window plants are as much appreciated at this season as at any time of the year. There are few things more beautiful than the old classes of roses—the *Borbon* and *China*. We have seen some beauties in windows recently, and wonder they are not more grown. In another case we saw a handsome *Chorozema cordata*. Usually, Australian plants do not thrive in our climate, but this plant was simply plunged in partial shade in summer, rewarding the owner with its pretty brown and purple butterfly-like flowers all winter. This, and many other window-flowers, are liable to suffer from the minute insect known as red spider. Very minute whitish green spots on the leaves usually indicate the insect's existence. It is best to lay the plants on their sides, in the open air, and treat them to a powerful syringing with strong soap-suds, and, while still damp, sprinkle a little sulphur on them from a pepper-box. Red spiders do not hanker much after sulphur. Sometimes window plants suffer from mildew, and sulphur is a good remedy for it also.

COMMUNICATIONS.

COOL HOUSE ORCHIDÆ.

BY MR. J. TAPLIN, SOUTH AMBOY, N. J.

Many people are under the idea that it is necessary to have a very high temperature for all Orchids; but this is a mistake, and has been often pointed out in the European gardening periodicals, but usually with the recommendation of a house specially devoted to this class of plants. This is quite unnecessary, for many of the most charming species will grow better in an ordinary greenhouse than in any other place.

In former times, when the high temperature system was believed in for Orchids of all kinds, the specimens from mountains and comparatively cool localities died off soon after importa-

tion; but now a more rational system is adopted we hear of wonderful success. Of course in this climate we can never expect the same success with a few of the very delicate specimens. For example, I have never seen a presentable plant of *Odontoglossum Alexandræ* in this country. I do not refer to the miserable little plants charged at catalogued price (and a good price at that), but to extra large plants purchased at also an extra large price from European nurserymen by a few of our wealthy growers. I do not despair of being able to grow this if I could obtain some respectable plant from its native country, and begin with them before they had been spoiled in two inch pots in Europe.

Most of the cool house Orchids are plants with small bulbs, and although many are found in large masses, the greed of the collectors and agents induce them to tear this into little bits, forgetting that any one having a knowledge of plants would rather pay \$10 for a large mass than \$1 for a small piece. For that reason I have often placed from twelve to thirty of these so-called plants together to make one. Of course buyers should not expect to purchase such masses at the same price they would pay for the little bits called plants sent from Europe. I heard recently of one comparatively common *Odontoglossum* purchased in Europe and made up with these small pieces for which the moderate price of 25 guineas was paid. I should have liked to get the same number of dollars for such a plant, and when twenty per cent. duty and freight was added, the price would be tolerable good for the seller, and rather high for the buyer. I may mention it is quite a waste of time and money to attempt growing very small plants of this class, for they all require keeping moist at all times, and little bits in pots are drowned and on blocks wasted.

I may also mention it is little use for amateurs to invest in freshly imported plants, unless they are well posted in their treatment, and have lots of spare time to continually look after them; for the plants are usually in very poor condition, so that it is a chance under good treatment if they will grow; most frequently from importing at the budding season, delay in transportation, &c., the growth is made and delays in the boxes, and if another growth pushes it is usually much weaker, and probably produced at the wrong season. But I must give a list of a few specimens which I have proved do well in a cool house, just

mentioning that I tried a few first as an experiment in the Camellia house. This is a large span-roof house 120 feet long, 20 feet wide, and 10 feet high, well ventilated on both sides of the top, and one side under the side shade. In Summer, of course, the house is very warm in hot weather, although generally cooler than outside, the roof being whitewashed and the floor damp, with air day and night. In Winter when most of these give cutting flowers, we ventilate most days if the house will not go below 40°, and keep it from 40° to 45° with fire heat; of course no shading is required in the Winter. The first species I tried were *Lælia anceps*, *Lælia acuminata*, *Cattleya citrina*, *Odontoglossum Rossi*, *O. Cervaentesii*, *O. Alexandræ*, *O. Turleagi leopardicum* (this last flowers better in a little more heat), *Oncidium pelicanum*, *O. Filipae*, and *Oncidium tigrinum*. This grows well, but flowers better in a little more heat.

I have since added a few more *Lælias*, which are growing and showing flower fine, and I think will be as satisfactory as the others; also, *Odontoglossum*, *Rossii major*, which I consider the most satisfactory of all. I have had one plant in flower for more three months; I have also *Odontoglossum grande* in splendid flower, and all the plants are growing well, although the first growth was killed in transit. *O. cordatum* with the best growth I have seen in this variety, and showing flower. *O. nebulosum* and a species of *Odontoglossum* sold for *citrosimum*, but is probably *maculatum*, which we shall soon see as it is showing flower, *Odontoglossum Medusæ*, a new species, the flower having the scent of water lilies. These were in such poor condition when received that I should not have been surprised if the plants had died, but I have dozens of fine young shoots, and lots of flower stems. Some have been in flower for months. This is a gem, and only costs in Europe two guineas for the ordinary sized plants. I need not mention that *Disa grandiflora* is quite at home in this house. I had eight flowers on several stems last year, but this is a rather difficult subject to manage in this dry climate, it being a native of Table Mountain, Cape of Good Hope, where the air is always saturated with moisture, so that thrip and red spider required constant watching; but there are few growers in England that do it well. I have grown it outside here in the Summer, but it was then more trouble to keep clean than when inside.

DISEASE IN MARECHAL NIEL ROSE.

BY WM. G. JOHNSON, ITHACA, N. Y.

I have just read the article by W., of Norfolk, Va., on disease of Marechal Niel Rose, but think he mistakes in assigning the cause to our severe climate.

Up to two years ago I think I had the finest single specimen for its age (three years) I ever saw; but now it is going in the way your correspondent speaks, viz: a knotty formation above the root. I had thought perhaps it was being on its own root; but last week, on a visit to the rose-houses of the late George Pumpelly at Tioga, N. Y., I found the great Marechal Niel rose in a worse condition than mine—in fact, just about dead. It is a grafted rose that Mr. Pumpelly procured at Boston, about six years ago, and is a remarkable bush, having a trunk at the graft, I should think, some 18 or 20 inches in circumference. It is mournful to see such destruction; and can't some of our horticulturists find a remedy? I should state that the Pumpelly rose is all right below the graft, say 18 inches above the ground, but just above the Marechal Niel wood is affected as mine is, and as your correspondent speaks.

SIZES OF ENGLISH FLOWER POTS.

BY MR. E. LONSDALE, GERMANTOWN, PHILADELPHIA.

As it is apt to confuse some of the readers of the GARDENER'S MONTHLY, when reading extracts from English gardening papers, in which the sizes of flower pots are too often technically enumerated, I beg to herewith append a table which, I trust, may be of service to them:

Thumbs, 2 in. to 2½ in.; sixty's (60's), 3 in.; forty-eight's (48's), 4½ in.; thirty-two's (32's), 6 in.; twenty-four's (24's), 8 in.; sixteen's, (16's), 9½ in.; twelve's (12's), 11½ in.; eight's (8's), 12 in.; six's (6's), 13 in.; four's, (4's), 15 in.; two's (2's), 10 in.

HOT WATER FOR MEALY BUG.

BY W. H. P.

A few days ago I found a young plant of Browallia with a multitude of mealy bugs on it, and as said insect is my favorite aversion, I put the whole affair in the feeding tank of my hot water fixings, and, I think, I fixed the bugs, while the plant seems none the worse. Water not over 120° Fahr. Let "Reader" try it and report.

[Water heated to 120° is an infallible remedy against all insects where the plants can be dipped for an instant therein, and where a plant is trained on a trellis it might, perhaps, be untwined and get a dip when infested.—ED. G. M.]

THE MEALY BUG.

BY S. O. KNAPP, JACKSON, MICH.

I notice your correspondent, "Reader," inquires for a remedy for mealy bug:

I have succeeded best in keeping them down by using a small stream of water with considerable force. I either plug the end of the hose nozzle or apply my finger, so as to produce a stream say the size of a large knitting-needle, then apply it directly around the leaves and flowers. This dislodges them at once, and with less harm to the plants than any other remedy I have tried.

ACCOHOL FOR MEALY BUG.

BY H. G., EASTON, PA.

Your correspondent, "Reader," asks: "Is there any cure for mealy bug?"

I have been using for some years, and do still, undiluted alcohol, applied with a small brush, and find it quite satisfactory and much more agreeable to use than whale oil soap.

ASTRÆA WALLICHII.

BY MANSFIELD MILTON, CLEVELAND, O.

A small tree from Madagascar, having large green leaves and gorgeous scarlet flowers, produced in large heads which are suspended in a drooping manner on rather long stems. In the greenhouses of Europe it has long been an inmate, but is seldom seen in this country. It requires a high temperature, but under good conditions makes rapid growth. A plant well furnished with leaves makes a beautiful object for out-of-door decoration during the summer, its large dark green leaves making it very conspicuous and ornamental. A large plant in a tub we have here, formed, associated with other plants of similar nature, quite a subtropical group on the lawn this summer. It succeeds well in a good rich fibrous loam, and when growing vigorously requires abundance of water. Good drainage is indispensable for maintaining a sweetness to the soil. Insects do not trouble it much if proper attention be paid to its several requirements; but if mealy bugs once get a foothold they are difficult to eradicate, finding good shelter from the stipules at the base of the leaves.

EDITORIAL NOTES.

ORCHID CULTURE.—While the writer was in Europe last year, he learned with great pleasure from the leading nurserymen that their trade

with America in orchideous plants was very much increasing, and on the whole, satisfactory. We take on ourselves some of the credit of this, as we have taken many opportunities of showing that while the old-time notions that it requires rare skill and very expensive houses to grow



ODONTOGLOSSUM CRISPUM.

them, is true only in a few instances. We are pleased to say that we have several articles on Orchid culture, and we have thought we could not do better than to give an illustration to this "Orchid commencement" of a beautiful one recently introduced by Mr. William Bull, from Bogota, who says of it "*Odon- toglossum crispum*, also known under the names

of *O. Alexandræ* and *O. Bluntii*, is one of the gems of the cool Orchid house, since by a little management its charming flowers may be had all the year round. It is a plant which varies to an almost endless extent, no two of the many thousands imported being perhaps exactly alike, and very considerable differences in size, coloring, or crispness in the flowers constantly occurring. In typical forms the sepals and petals are white, ovate or ovate lanceolate, the petals being much undulated, and often fimbriately toothed. The lip is oblong-acuminate, yellow and crested toward the base, beautifully crisped at the margin, and more or less spotted towards the front with blotches of reddish brown. It has been very largely imported from Colombia, and in some of its forms is flushed with a lovely tint of rose." We note by Mr. Bull's catalogue that this is not among the very expensive Orchids. Good plants being obtainable in England for about \$5.

CULTIVATING OLD PLANTS.—Fine specimens, showing great skill in culture, can be as well shown by growing old things as new ones. It is said that the common candy tuft makes wonderfully beautiful specimens when well grown.

PLANT CULTURE IN THE WEST.—An impression prevails that the culture of plants, amidst the prevailing rage for mere cut flowers, and perhaps the prevailing depression, is declining, but a correspondent tells us that L. B. Case, of Richmond, Ind., has done a very satisfactory business in them the past season.

BEAUTIFUL AUSTRALIAN PLANTS.—It is a matter of astonishment that the beautiful Australian plants, generally winter-flowering, are not more generally grown in our greenhouses. Some of them with delicate hair-like roots, suffer from our dry summer heats, but those with heavier ones do well. At a recent Germantown Horticultural Society meeting, Mr. Lonsdale exhibited a plant of *Grevillea robusta*, which, besides the beautiful and curious flowers it will have, as it grows older, has pretty fern-like foliage. It ought make a good room plant as well as a desirable one for the greenhouse.

DOUBLE CHINESE PRIMROSES.—Since the discovery that double Chinese Primroses could be obtained readily from seed, great improvements have been made therein. The *Florist and Pomologist* gives a colored plate of a beautiful peach blossom variety called Miss Eva Fish, the flowers of which are an inch and three-quarters

across. In our own country, there is much improvement going on, notably by Mr. John Saul, of Washington, and Mr. Edwin Lonsdale, of Germantown. In England there are long lists of named kinds as of Dahlias and Geraniums.

WINTER DECORATIONS.—Mr. W. T. Bell, of Franklin, Pa., contributes an excellent paper on "Decorative Plants," to the *Franklin Spectator*. The great value of the Holly in English decorations is from its bright scarlet berries. We cannot always have these; but we can mix other berried plants with evergreen with good effect. *Prinos verticillata*, *Celastrus scandens*, and *Mitchella repens* among others that could be usefully employed, as Mr. B. observes.

NEW OR RARE PLANTS.

DWARF CRESTED JAPANESE COCKSCOMB.—We note with pleasure the efforts of our own florists to improve garden flowers. Messrs. Nanz & Neuner, of Louisville, have very much improved the Japan Cockscumb, by developing a regular row of small ones under the main head, as per illustration annexed.



The stock is in the hands of Messrs. D. M. Ferry & Co., of Detroit, Mich. It grows about 15 inches high, with a collar of leaves under the crimson head, and small collars under the smaller heads. It ought to make a capital subject for plant growers to try superior skill on.

PRESIDENT DEGRAU CARNATION.—A Western correspondent writes that this variety has degenerated in that section this season, and asks is it general?

COLEUS PICTUS.—While in Mr. Bull's greenhouses, near London, recently, the new and very

distinct *Coleus pictus* attracted our attention. We were very much pleased recently to see the same pretty novelty in the collection of H. A. Dreer, of Philadelphia. The following illustration was taken from Mr. Dreer's plant, but the description is Mr. Bull's:

This distinct and attractive plant has been introduced from Duke of York Island. Its diverse colors are curiously blended, and very effective, the leaves, which have a green ground, being more or less, but variably flushed with yellow in

AGAVE SHAWII.—This new species, named by Dr. Engelmann in honor of Mr. Shaw, the generous proprietor of the Missouri Botanical Garden at St. Louis, has recently flowered on Mr. Shaw's grounds, and has been a topic of much interest with St. Louis horticulturists and botanists.

SUMMIT OF PERFECTION GERANIUM.—Kretschmar Bros., Flatbush, L. I., write: We sent you two plants of a new double seedling Geranium,



COLEUS PICTUS.

irregular patches. The leaves are also marked in the direction of the veins, with longitudinal bars, varying in size and outline, of a rich chocolate brown, which where it meets the parts flushed with yellow, assumes a reddish brown hue. The marginal teeth are bordered with chocolate color. These peculiar markings, and the unusual form of the leaves, give the plant a bizarre and curious appearance.

NANZ & NEUNER'S NEW DOUBLE, WHITE, PERPETUAL BLOOMING CARNATION, "PETER HENDERSON."—This choice novelty was raised from seed, by Mr. John Charlton, of Rochester, N. Y. The plant is of a strong-growing, dwarf, compact habit, with rich, dark foliage, producing an immense number of flowers, both in winter and summer, being in fact as well as in name a perpetual blooming carnation. The flowers are usually $2\frac{1}{2}$ or 3 inches in diameter, or nearly double the size of any other variety; fine form, pure white, extra fragrant, and never bursts the calyx, which is the usual rule for all carnations, but the flower remains bright for over two weeks.

begging you to report on them in the GARDENER'S MONTHLY after a Summer's trial.

Our seedling, exhibited at the New York Horticultural Society's Spring Show, May 26th, 1877, was granted a special premium, and at the same society's Fall Exhibition, September 26th, 1877, a specimen plant of it, of two feet diameter, with fifty-two flower stems, was awarded the first premium. "Summit of Perfection" we have named it.

[These were planted in the open ground, and proved to be remarkably free bloomers, which the doubles are generally not. It is a scarlet variety, and the flowers not so double as some others. There is a striking resemblance between it and another seedling called Conrad Kirchner, sent us also to try, and we are unable to decide which is best.—Ed. G. M.]

SCRAPS AND QUERIES.

SCALE ON THE IVY.—Mrs. H. P., Guilford, Conn., writes, "Can you tell me, through your

magazine or otherwise, what the insect on the enclosed leaf is, and what will rid them from my plants? My large ivy and some roses are thickly infested." [This is the common greenhouse scale, and a sponging of whale-oil soap is generally effective.—ED. G. M.]

THRIPS ON AZALEAS.—C. T. W., Hartford, Conn., writes: "I have noticed lately that the buds of some of my Azaleas are growing to look like the enclosed; and while I have no doubt that some insect is at the bottom of the trouble, I have not been able to discover (although I haven't used a glass) anything of the kind. I have found, accidentally, a very small black fly in the under surface of some of the larger leaves. I have never had any experience with the thrip, which I understand is sometimes a great pest on Azaleas; so that if it is this that is troubling me, I am unable to recognize it. If you think

that the delay will make no difference to the plants, please give me what light you can through the *GARDENER'S MONTHLY*." [This is a case of thrips, which are generally easily kept under when in greenhouses, by tobacco smoke. Where there is but a plant or two, the hot-water remedy may be tried. The water must not be over 120°, and the plant be dipped in only for an instant.—ED. G. M.]

ARCHBISHOP WOOD GERANIUM.—A correspondent writes, reminding the readers of the magazine that the correct name of this geranium is Archbishop, not Bishop Wood. It is a small matter, but we agree with our correspondent that it is as well to be accurate as not.

AMARYLLIS AND THEIR CULTURE.—J. H., Jr., Glendale, Mass., would feel obliged if some correspondent could tell a little about Amaryllis and the plants related to them, &c.

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

In order to grow good fruit, we need only repeat in a general way, that trees require as much food as a crop of corn, or potatoes; but it is very important to keep the feeding roots at the surface, and therefore that the very best way to mature fruit trees is by surface dressing.

Manuring of grapes should be regulated by the nature of the soil. If it be damp—in most cases a bad condition for grape growing—stable manure in great quantities means diseased vines. In dry ground, it has a beneficial effect. Many persons of small places have grapes in damp ground, or can have none. They must take care to keep the roots near the surface; never crop the ground about them to destroy the small fibres, if it can be avoided; and even good may often follow, when the vines seem failing, to carefully follow up the roots, lift near the surface, and encourage, as much as possible, those remaining there. Wood-ashes, bone-dust, and such like fertilizers are best for grape-vines in low ground.

All fruit trees like a rather dry, rich soil. On a cold, clayey bottom, diseases are usually fre-

quent. Do not plant deep; cut off tap roots, and do all you can to encourage surface fibres. Surface manuring is the best way of doing this after the tree is planted. Do not allow anything to grow vigorously around your trees the first year of planting, nor allow the soil to become hard or dry. Let trees branch low, and prune a little at transplanting.

Pruning of fruit trees, when required, should be proceeded with at favorable opportunities. We write *when required*, for in our climate more injury is done by the knife than by the neglect to use it. Gooseberries, for instance, are usually ruined by pruning. In Europe, it is customary to thin out the centre well to "let in the sun and air." Here it is the sun and air that ruin them, by inviting mildew; and so the more shoots the better. Our country farmers are the best gooseberry growers, where weeds run riot and grass and gooseberries affect a close companionship. Wherever, in fact, the gooseberry can find a cool corner, well shaded from the sun, and with a soil which is never wet, nor yet by any means dry, there will gooseberries be produced unto you. The English kinds mildew so universally as to be almost gone out of cultivation south of the St. Lawrence. Nor, indeed, is it to be so much

regretted, since the improved seedlings of large size and fine quality, raised from the hardier American species, are becoming known, and their merits appreciated by growers.

The rule, in pruning grape-vines, is to shorten the shoots in proportion to their strength; but if the advice we have given in former Summer hints has been attended to, there will be little disproportion in this matter, as Summer pinching of the strong shoots has equalized the strength of the vine. Those who are following any particular system will, of course, prune according to the rules comprising such system. As a general rule, we can only say, excellent grapes can be had by any system of pruning; for the only object of pruning in any case is to get strong shoots to push where they may be desired, or to increase, with the increased vigor of the shoot, which pruning supposes will follow the act, increased size in the fruit it bears.

In the Northern States, Broccoli, and Cauliflower when sown in March as recommended, do not head early enough in Fall. It should be sown about the time of Early York Cabbage, in the hot-bed, during this month.

About the middle or end of the month, or still later in the North—say the middle of March—Celery and late Cabbage may be sown. Here, we usually sow the second week in March.

In the more Southern States, the gardener will lose no time in getting in his Potatoes, Beets, Carrots, Parsnips, Peas, Spinach, Radishes, Lettuce, Onions, and Salsafy. These should be the first crops put in after the season breaks up for good. The earlier they are in the better. Asparagus, Rhubarb and Horse-radish beds may now be made. Asparagus roots are generally planted too thickly to produce fine shoots,—they starve one another. A bed five feet wide should have three rows, and the plants set about eighteen inches apart. A deep soil is very important, as the succulent stems require every chance they can get for obtaining moisture. About four inches beneath the soil is sufficient to plant them. Rhubarb also requires a deep, rich and moist soil. Horse-radish beds are best made by taking pieces of strong roots, about one inch long, and making a hole about a foot or fifteen inches deep, with a dibble, and dropping the piece to the bottom of the hole; a clean, straight root will then rise up through the soil. Crowns or eyes are better than pieces of roots,—where they can be had—and a rich clayey soil better than a light sandy one.

In the Middle States the work for February will, for the most part, consist of preparations for future operations, and particularly for dealing with the manure question. All those kinds that are grown for their leaves or stems require an abundance of nitrogenous manures; and it is useless to attempt vegetable gardening without it. To this class belong Cabbage Lettuce, Spinach, etc. The other class, which is grown principally for its seeds or pods (as Beans, Peas, etc.), does not require much manure of this character; in fact they are injured by it. It causes too great a growth of stem and leaf, and the earliness—a great aim in vegetable growing—is injuriously affected. Mineral manures, as wood ashes, bone-dust, etc., are much better for them. For vegetables requiring rich stable manure, it is better that they have it well rotted and decayed. Nothing has yet been found so well fitted for the purpose as old hot-bed dung: though to the smell no trace of “ammonia” remains in it.

One of our most interesting parts of a vegetable garden is a hot bed for starting seeds early. The end of the month will be time enough for those who have not command of a large supply of stable manure, as the very low temperature we often get at the end of the month soon absorbs all the heat the hot-bed possessed. It is in any event best to put up the beds in the warmest and most sheltered spots we can find, and to keep cold winds from the manure, by covering it with branches of trees or mats; and the glass should always be covered with mats at night. Tomatoes, Egg-plants, Peppers and Cucumbers are the first seeds to be sown this way. Cooler frames can be got ready for Cauliflower, Lettuce, Beets, Celery and Early York Cabbage, a little of which may be sown about the end of the month for the earliest crop. The Cauliflower is a particularly valued vegetable, and no expense spared to get them in perfection will be regretted when one's efforts are successful.

In the open air, should the weather prove favorable, as it often is about the end of the month, Peas and Potatoes may be planted. Frost seldom gets deep enough in new dug ground to injure them after this date.

In managing the vegetable garden the highest excellence should be aimed at. This is the chief source of pleasure in a garden. If one can take no pleasure in his garden—if the watching of the beautiful processes of nature in furnishing him food—and the many lessons they teach him,

which he in a thousand ways can so pleasurably and profitably apply, have no charms and attractions for him, he had better give up gardening; for assuredly, in most cases—even to 99 in 100 instances—the market gardener will bring the vegetables to his own door cheaper than he can grow them. Amateur gardening should primarily be pursued for the lessons it teaches, and the pleasure it affords; when it ceases to do this it should be abandoned.

COMMUNICATIONS.

GRAPE CHAT.

BY REV. W. H. W., READING, MASS.

The grape crop here in New England has been in some respects exceptionally good. Our warm and dry October has ripened up many varieties to an unusual excellence, and made us appreciate them more highly than ever before. And yet the amount of our crop, in some cases at least, sadly diminished by the unprecedented number of rose-bugs. Never, in all my experience, have I seen such swarms of them before. I have repeatedly taken from one to two dozen from a single cluster. The consequence was that, notwithstanding my utmost efforts, some of my vines were entirely stripped. Some large vines did not ripen a single berry, while on others I succeeded in saving from a tenth to a half of what they would have borne but for the bugs. How shall we get relief?

Miner's New Seedlings—It has been known for some time past, that Mr. T. B. Miner, of Linden, N. J., has several white seedlings of Concord, which have been pronounced, by those who have seen the vines and tasted the fruit, exceedingly promising. If I am not mistaken, Mr. Andrew S. Fuller has commended them quite warmly in the *N. Y. Tribune*. Mr. M. sent me a box of the fruit for exhibition at our Massachusetts Horticultural display in September, but they reached me in such impaired condition as to be utterly unfit to place upon the tables. I could, however, get some idea of the quality of the fruit. The berries that I tasted were very sweet and delicious, but not so free from toughness of pulp as is desirable. But I ought to add that I had no such specimens of fruit to test as were adapted to do the variety justice.

Brighton.—No fruit of this new variety was shown at our annual exhibition, and I cannot speak of its quality. But I am very much pleased with

the vigor and healthfulness of the vines. It is a strong grower, and yet not rampant, and bids fair to prove hardy and prolific. Its fruit is highly praised by those who have eaten it.

Lady.—This still proves with me a very feeble grower. A splendidly-rooted two-year-old plant, received last spring from Mr. Campbell, and planted with extra care, in good soil, has grown only about twelve inches. My vines that have been planted two years grew this year only three or four feet, while Brighton, Black Eagle, and Delaware, beside them, have made from twice to four times the amount of wood. Lady, however, seems entirely healthy, so far as my brief experience enables me to judge.

Early Champion.—There are two grapes of this name in the market. One originated in New York, and is an early, hardy, vigorous grower, and probably identical with the Tallman. In quality it is only tolerable. The other originated in New Orleans, and is a much better grape. It is very early, more so than Hartford, vigorous, healthy, productive, and of very good quality. Both are black. The latter is one of the most promising grapes we have for early market. But in some way the difference between the two should be indicated by a change of name in one or the other.

Lady Washington.—It is very agreeable news to all lovers of choice grapes, that Mr. Ricketts, of Newburgh, has at last decided to offer this splendid variety to the public. He deems it, all things considered, one of the best of his entire collection. If the vine shall prove healthy and hardy, so that we can all raise such fruit as Mr. R. does, then indeed the grape millenium will seem to have come at last.

EDITORIAL NOTES.

ORCHARDS IN GRASS.—When, at the commencement of the GARDENER'S MONTHLY, we showed that the best kind of cultivation for orchards was to well care for them in grass, few of our younger readers can have any idea of the storm of indignation on the one hand, and ridicule on the other, which we had to encounter. Our advice was contrary to that given in "the books;" but we knew, from the lessons of experience, that the advice of the books was wrong, and dared to say so. We lost some subscribers by telling the truth as we found it, but we quieted our (then) publishers by the assurance that it would all

turn out right, by and by. Pears especially we recommended should be well cultivated in grass, putting it particularly on the ground of its healthfulness, and illustrating it as the experience of Abraham Barker, near Philadelphia, whose orchard, on the plan invented by Æsop, which, "dug around and manured, to let in the air and the food" to the roots, came near being a disastrous failure, till he took our advice and sowed it down in clover and grass, and top-dressed with manure afterwards. To-day that orchard is one of the best about here. We have also referred to another orchard of 50,000 pears, set out by its enthusiastic owner to show expressly that we were wrong. This orchard has been the victim of disease till but a few are left. Immense numbers were dug up and burned; and this orchard too within gun-shot of the very successful one of Abraham Barker. These and similar facts we have continually referred to; but we have been told that we *must* be wrong—that Elwanger and Barry "cultivated," and they had no disease; that Marshall P. Wilder "cultivated," that C. M. Hovey and Patrick Irwin "cultivated," and they had no disease. But on our own examination of the orchards of Wilder and Hovey, we found that though they were not actually in grass, they were practically on our plan; for the surface was barely stirred, and the latter top-dressed with seaweed. However, we need not here go over again with all that has passed; but we now know—everybody now knows—that the best orchards in the Union everywhere are those which are *well cultivated in grass*.

It gives us great pleasure to append the following from the *Country Gentleman*. We give it with the more satisfaction because we always felt that the *Country Gentleman*, while opposing our views, did so honestly, in the belief that we were advocating not good culture in grass, but absolute neglect in grass; and we had full faith that as it came to understand us fully, there would be little difference of opinion between us; for the *Country Gentleman* is too progressive a paper not to be willing, as we are, to learn as we go along. It says:

"Since the wide prevalence of the blight in the pear, a large number of instances are reported of greater immunity from this disease in trees growing in grass; while in rarer cases the reverse has been observed. The evidence, however, preponderates in favor of pear orchards in grass—this remark applying to standard trees."

CALIFORNIA WINE.—It is said the Californians intend to make a strong exhibit of their wines in Paris.

PRIDE OF THE HUDSON RASPBERRY.—This is a new variety which is spoken of in intelligent quarters.

THE FIG IN OHIO.—The Montgomery (Ohio) County Horticultural Society reports that the Fig can be quite successfully grown in that State, with but slight protection in Winter.

TEA PLANTS IN CALIFORNIA.—Recent experiments do not seem to be a great success. It is said the leaves fall in Summer from the warm, dry atmosphere.

THE BEAUTY OF THE PHILADELPHIA PEAR TREE.—The Belgian *Horticultural Review* says that in the fall of the year, the American Pear, Philadelphia, has its leaves turn to the beautiful brown color so characteristic of some Maples and Sumachs. It also speaks of Clapp's Favorite, in connection with its large and showy foliage.

PHYLLOXERA AND GRAPE ROT.—The *Valley Naturalist* tells us that at a recent meeting of the St. Louis Academy of Science, the President C. V. Riley, alluded to the prevailing impression that the Phylloxera caused the grape rot. It says: "In consequence of some official statements by Prof. Cook, of the Michigan Agricultural College, the President desired it to go on record that he totally disagreed with the professor as to there being any connection between *phylloxera* and the rot on the vine.

Dr. Engleman agreed with the President in this view."

BEST APPLES FOR MISSISSIPPI.—The most popular apples in this State, seem to be Schockley, Yates, Kentucky Streak, and Nickajack. The last name has a wide popularity in the South. The apple does very well in the northern part of the State.

GRAPE DISEASE AND PHYLLOXERA.—It is the misfortune of many good ideas to be so ridden as get run into the ground, and this is the way with the Phylloxera. This pest is bad enough in all conscience. It injures roots to such an extent, that, once effected, the plant is liable to mildews and many other diseases. But now come people who forget that there are many other enfeebling causes; and moreover, mildews and moulds do not always wait for weak plants, before beginning their destructive work. Mr.

W. Saunders records an experiment where he took a branch of a grape vine out of a vinery, part in the house, and part in the open air, and, while the plant inside kept healthy, the exposed branch was mildewed, and this accords with the experience of the best gardeners. *Phylloxera* does a good deal, but far from all of our grape mischief.

TROPICAL FRUITS.—It is said that plants of the Japan Persimmon are introduced into California, duty free, as "tropical fruits." We pass no opinion here on the policy of duties on trees and plants; but are interested in the geographical problem. We had no idea that even an American Congress would regard Japan as "within the tropics;" but then an American Congress is a thing wonderfully and fearfully made. It was only a year or so ago, we had to call its attention to the fact, that a *Rhododendron*, when it reached the shores of Boston, from England, became a "semi-tropical fruit." We are sorry for the plants, but must keep our geographical heads level.

TESTING OLD SEEDS.—People often have seeds on hand that they would like to sow, if only sure of their vitality. A correspondent of the *Gardener's Magazine* gives the following for turnips, and it may do for many others:—

"Before sowing a field of turnips the seed was invariably tested in the following simple manner: An ordinary dinner plate was taken, and a circular piece of fine flannel just large enough to cover the lower part was laid upon it. The plate was then placed on a table before a window on the sunny side of the house. The whole mass of seed to be tested was then thoroughly mixed by hand, so that a fair sample could be taken from it by a small spoon. The seeds so taken were laid on a piece of paper and carefully counted, but without selection for quality, and a number, say 200 seeds, were then spread evenly on the piece of flannel before named, after which a little cold water was gently poured over the flannel until it was saturated, but not quite covered; in this way it was allowed to stand for a few days exposed to the influence of light and air, when the swollen seeds were seen to have germinated and thrown up long and slender white shoots of half an inch or more in height. All that was then necessary was simply to count the number of dead seeds that lie exposed on the flannel in the same condition in which they were placed there, and hence the

precise percentage of live and dead seeds were accurately ascertained. When this percentage was unsatisfactory, my father invariably returned the seed to the merchant and bought some other in its place, but he never lost a crop of turnips from using dead seeds."

NEW OR RARE FRUITS.

SCRIBNER SPITZENBURG APPLE.—J. W. B., Plattsburgh, N. Y., writes: "Referring to your remarks on the want of a more hardy and vigorous tree of the peculiar flavor of the *Esopus Spitzenburg*, and as abundant a bearer, I have to say that I have that variety. I exhibited the fruit at the annual meeting of the New York State Agricultural Society, 1859, and received a silver medal for it, named *Scribner's Spitzenburg*. It is hardy and vigorous, of the form and peculiar flavor of the *Esopus* variety, and the tree more hardy and vigorous, color a lighter red than *Esopus*. I propagated trees of this variety, and sold it from my nursery for several years; but as I have not propagated any trees for several years, I have none for sale at present, but can supply in small quantities next Fall. I will, if possible, send you a sample of the fruit next week."

[The apple was a little over ripe. We should judge from this that it is a little earlier than its parent. The fruit is also more angular, but in other respects very much like the *Esopus Spitzenburg*. So far as we can judge from these, the variety is nearly, perhaps quite, as good as the original.—ED. G. M.]

RESCUE PEAR.—P. D. S., Hartford, writes:—"I sent you to-day through the post office a small box with a pear of a variety, I think, unknown, having never seen it at any of our pomological exhibitions. I esteem it one of the very best late keeping Winter pears. Of its beauty and quality you can judge for yourself. This variety came into my possession some 10 or 12 years since. A friend living in the city of New York knowing that I was interested in pear culture, stated to me that there was growing on his uncle's place, in the upper part of the city, a very old pear tree, which they had just discovered was a very choice Winter variety. The family had always been in the practice of cooking the pears in the Fall of the year, thinking them a common cooking pear, but accidentally a quantity of them was put into a trunk and placed away in a dark closet, and were left until some-

time in the month of February, when upon opening the trunk they were much surprised to see the pears fully ripened, and of a beautiful golden color. I obtained a few grafts from this original tree, and do not know that any were given to any other party. I have distributed a few of the grafts to friends in our city, some of whom have fruited it, and are much pleased with them. Should it prove to be a new or unknown variety I have thought to give it the name of "Rescue," presuming that the original tree has disappeared in the extension of the city of New York, and that it has been rescued from extermination through the few grafts obtained by me. The pear that I have sent is one of the largest that I have grown, being above the average size. Should the pear come to you in a good condition,

I should be pleased to have your views respecting it.

[It came to hand early in January. It is something in the way of Beurre Diel, but superior to any other variety we have met with for many years. It is not known to us, and we can say that as to size, flavor and general appearance it is a truly first-class fruit.—ED. G. M.]

BURNET GRAPE.—This Canadian variety is receiving much praise in Northern papers. It was originated in Prince Edward County by Mr. Peter C. Dempsey, one of our most skillful growers. The fruit is large, purplish black, sweet and rich, and ripens earlier than the Concord. The vine is vigorous, productive and hardy.

FORESTRY.

COMMUNICATIONS.

AMERICAN FORESTRY.

BY W.

No doubt many of your numerous readers, who have interests outside of the greenhouse and potting-shed, will be pleased with your department of Forestry.

This is a branch of industry which has been far too much neglected, and yet it is one that requires an extensive range of knowledge, which, unfortunately, has not yet, in our country, been brought to bear upon it. An increasing interest is, however, apparent among the people. This is manifestly the case in the Western or prairie States, where, in the horticultural societies, Forestry vies with Pomology in the rank assigned to it. Your prairie farmer soon learns the benefits conferred by groves and shelter belts.

Your readers may be glad to know that this matter gave rise to a very spirited discussion before the American Nurserymen's Association, at their meeting last June in Chicago. This resulted in the appointment of a large committee, who were charged with the duty of preparing a memorial to Congress, asking that a commission be appointed to visit, study, and report fully upon the forests of Europe. That memorial has been presented to both houses of Congress, and, with a bill providing for its proper execution, referred to the appropriate committees.

It is earnestly hoped by the memorialists, especially since the matter has received the endorsement of the Secretary of the Interior, that Congress will soon act in the matter and make a suitable appropriation for the commission.

The several agronomic associations, especially those of the Western States, now holding their annual winter meetings, are warmly endorsing the action of the memorialists, and urging their delegates in Congress to lend the project their hearty support; so that it is hoped that the bill now before Congress may become a law; then, if the President be fortunate in finding a suitable nominee, we may anticipate a good and useful report, that will convey to the people a vast deal of really valuable and practicable information upon this branch of agriculture that is, as yet, a *terra incognita* to us.

SCARCITY OF DOGWOOD.

BY MISS M. MUMFORD, WASHINGTON, D. C.

Since sending you my article on the above, I came across the following in Loudon's *Encyclopædia of Plants*: "*Rhamnus frangula* has dark purple berries. The flowers are particularly gratifying to bees. Goats devour the leaves voraciously, and sheep will eat them. Charcoal prepared from the wood is used by the makers of gunpowder. The berries of this species, and also of the *Cornus*, are said to be brought to market and sold for those of the buckthorn; but they are easily distinguished, the true buckthorn having four seeds, this two, the *Cornus* one."

EDITORIAL NOTES.

FOREST COMMISSIONERS TO EUROPE.—The Nurserymen's Association petitioned Congress to send a commissioner to Europe to learn how to preserve American forests and plant new ones; and Dr. Hough will probably be sent there, as we learn from the daily papers Congress is likely to vote \$6,000 for that purpose. Dr. H. has submitted a very full report of his last year's operations.

CATALPA TIMBER.—The *Practical Farmer* has a good word for the Catalpa, from the editor's personal experience of its value. He says it has an additional advantage over locust in being free from borers.

NATURAL TRANSPLANTING.—A Western paper has the following curious paragraph: "A blue ash tree seven feet in circumference and eighteen feet in height, its top having been previously cut off, was recently dislodged by a swollen stream in Ohio, floated 340 yards, and again took root, six feet above the present level of the creek, and is doing well."

FORESTRY OF OHIO.—Ohio was a densely timbered State, having about 14,000,000 acres, at its settlement. Of these it is computed that about 6,000,000 acres have yet the original standing timber thereon.

CAMBRIDGE (MASS.) BOTANICAL GARDEN AND ARBORETUM.—The annual report of the director, Prof. C. S. Sargent, is full of interest. It shows the progress which has been made in the work to the 31st of August, 1877. We make the following extract as of a matter of interest to all of us as

well as to the Harvard University, to which the report is addressed:

"Judging from the immense number of letters which are annually sent me in regard to trees and tree-planting, it seems evident that there is a steadily increasing interest felt in arboriculture, which it should be the duty of the arboretum to foster in every possible manner. The mere answering of the letters, communications and inquiries received from nearly every State in the Union, and from almost all the countries of Europe, would have more than occupied my whole time; and they must have been neglected, had not Mr. Francis Skinner voluntarily assumed charge of this department, and relieved me of all correspondence of a merely routine description.

It is but five years since the first establishment of the arboretum, but its influence and usefulness are already evident. To its establishment can be directly traced the planting during the past season of nearly half a million trees in the New England States alone. Through its influence attention has been called to the necessity of the more general cultivation of the American White ash, a tree of the first economic value, and now rapidly disappearing from all but the more recently settled portions of the country. Up to the present year young ash for general planting could not be procured either at home or abroad. They are now raised in such numbers as to be within reach of all. I have been able to demonstrate, also, that seedling forest trees, for which the Eastern States, at least, have largely depended on foreign nurseries, can be produced equally well and at cheaper rates than abroad. So that in the future, this business, which promises an immense development, will be a source of profit to American industry, while planters will be saved the risks and expenses which necessarily attend the importation of such perishable goods as living plants."

The work which Prof. Sargent is doing is really a national one, and he deserves the hearty thanks of all who desire to see American arboriculture prosper.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

ABIES OR PICEA; WHICH IS IT?

BY SAMUEL B. PARSONS.

I have often been impressed with the mixed nature of *foreign* nomenclature, and I now notice that you propose to call all conifers with erect cones *Abies*, and those with pendant cones *Picea*. You thus make our common Balsam Fir and its congeners *Abies*. It will be difficult to make gardeners recognize this distinction.

If you will show an observing, intelligent man a Norway Spruce and a Silver Fir as types of their respective classes, and let him study them well, he may go through the most varied nursery and will infallibly place all of each class by themselves, whether the cones are erect or pendant. The difference in the foliage of the two classes is very marked and clear. You would scarcely call the Norway Spruce *Picea excelsa*; and yet if you preserve the old name of *Abies excelsa* the distinction is so great that it is difficult to adopt *Abies Balsamea* as the true name of our

American Balsam Fir. Moreover, in experimenting for twenty years, we have never succeeded in grafting any of the Norway Fir class upon the Balsam stock or the converse. There is so marked a difference in the roots that our propagator, Mr. Trumpy, can always recognize them when shown him without the tops. Nearly all the *Abies*, as we have hitherto termed them, grow freely from cuttings; the *Piceas* grow from cuttings with great difficulty.

We are accustomed humbly to bow to the dicta of botanists, but do they all agree in this nomenclature? If not, let us adhere to the old names which are dear to some of us by associations. *Virgilia lutea*, with its liquid Italian sound, was a pleasant name to utter. *Cladrastus tinctoria*, its successor, is harsh and discordant. The *Corchorus* of our childhood was a beautiful flower. The *Kerria* does not bring up so pleasant a memory. The strong growth and showy bloom of the *Bignonia* was always a pleasure. The *Tecoma* will never seem quite the same thing. For all purposes we need correct scientific nomenclature, but without strong reason do not let us break up the association of the past.

[Our correspondent, we fear, misapprehends, for there is no intention of confusing the Spruce and Silver Firs together. But the names are wrong. The disagreeable changes to which he refers in the latter part of his communication come from the indifference to being right. If people would be careful to be "right before they go ahead" in plant's names as in other things, the trouble of changing names, to which he refers, would not occur.

We are not changing names now, but are simply pointing out that which is right, for *Picea* is the oldest and proper name for the spruces, and *Abies* for the firs. At one time we feared to advocate the right, lest it might make trouble; but no more confusion can possibly arise than at present exists in Europe, scarcely two writers agreeing as to whether a plant in question is a *Picea* or an *Abies*. Indeed, the Balsam Fir, used by our correspondent as an illustration, is as often called *Abies Balsamea* in European works as anything else.

Our best botanist in Coniferæ, Dr. Engelmann, refuses to recognize the modern *Abies* and *Picea*, but contends that they should be transposed to their proper places. In view of the confusion already existing in European nomenclature, it will make no trouble now to hold out for the right.—Ed. G. M.]

EDITORIAL NOTES.

CRACKING OF THE PEAR.—It must be clear to all who have given close observation to the subject, that there are several, if not many causes, which make the fruit of the pear crack—that one cause is the operation of a minute fungus; and we believe this has been made quite clear to our readers, as well as to the readers of the proceedings of the American Pomological Society. The knowledge we have gained in this country on this subject does not, however, seem to have extended to Europe, for we find the following in one of our European exchanges, given as an original discovery:

"M. Prilleux has communicated to the French Academy some observations on the black spots sometimes found on pears, and which are known to the Paris gardeners as *avelures*. He has noticed that cracks in the fruit usually originate in these spots. All varieties are not equally subject to them. *Doyenne d'hiver* suffers most frequently and most severely. Wet seasons favor the appearance of these spots, and standards generally suffer more than wall-trees, and those with a southwest or western more than others with an eastern aspect. Some trees are affected year after year, while others similarly circumstanced escape altogether. The spots he finds to be produced by a small fungus, *Cladosporium dendriticum*, Wallroth, which was first noticed by that naturalist on apple trees. The filamentary spores take root in and penetrate the superficial tissues, swell at the extremities, and divide into small cells, which again divide, forming a mass of minute blackish cells (as may be seen by lifting the epidermis of a leaf thus affected), spreading their sporiferous filaments in all directions. The effects are different on different parts of the plant. On a leaf the part affected blackens and dies, but the rest of the leaf remains sound. On the bark crevices and nodes are formed, which, however, are not generally conspicuous. On the fruit it is different. The superficial growth is partially checked by the presence of the parasite, whilst that of the minor parts continues; consequently, unless relieved by early excision, the fruit becomes deformed, the dead parts distend, and the exterior cracks, exposing the sound portions within. The existence, sometimes unnoticed, of the fungus on the bark of particular individuals explains its reappearance year after year on their fruit, although it may not be found on their neighbors. The peculiarity may be communicated by grafting."

SCRAPS AND QUERIES.

THE WEATHER IN NEW YORK.—S. F. T., Saratoga Springs, New York, under date of January 4, writes: "Thinking that the en-

closed might be of some value to show the sudden changes of a northern New York climate. I send it, and also the weather report for December, 1877, which you will notice is very mild. Our first real snow storm (northeast) is at hand to-day, after another change last night from 7° below zero to 10° above.

"The January number of the monthly is just prime A 1, and you see that the article on 'Stoking a Fire' is needed in this part of the country."

[The *Daily Saratogian*, New York, as referred to above, says :

"Between 11 o'clock last night and 7 o'clock this morning the temperature of the weather changed 27 degrees. At Terwilliger's green-houses on South street at 11 o'clock the thermometer indicated 14° above zero, and at 7 o'clock 13° below, making a difference of 27° in eight hours."

It has been, so far, a delightful winter. For a couple of nights in Germantown the thermometer made a hasty visit to 10° above zero, but to-day, January 12th, the temperature is 50°, and the atmosphere as genial and balmy as an April day.—ED. G. M.]

LITERATURE, TRAVELS *and* PERSONAL NOTES.

COMMUNICATIONS.

"THE FERNS OF NORTH AMERICA."

BY T. G. GENTRY.

The first part of the superb work, which bears the above title, has lately been issued by the Naturalists' Agency. A work which should accurately describe and appropriately illustrate our American species of ferns, has long been needed in this country. The few which have been delineated are scattered through so many foreign publications that considerable trouble is experienced in finding them. Even in many of our finest libraries these works are generally wanting.

But the one before us, judging of the whole by the past, cannot fail to meet the necessity. The high character of Prof. Eaton, who prepares the text, and the reputation of Mr. Emerton, the artist, whose drawings are unequalled, are assurances that the work will be carefully, thoroughly and accurately done. The interest which is manifested in the undertaking by Dr. Gray, and others no less eminent in science, should convince us of the excellence of the work, even though other guarantees should be lacking.

Ferns have always attracted the attention and won the admiration of every true lover of Nature, not more by the elegance of their dark green foliage than by the gracefulness of their forms. Although ignorant of their names and the details of their growth and structure, man has never ceased to show his fondness for them. Shut out from such knowledge by the technicalities of science which enters so largely into our common text-books, a deep interest is never-

theless manifested in these beautiful objects of creation. This is evidenced by the care bestowed upon their culture, and upon the arrangement of them into suitable devices for the boudoir and drawing-room.

Who does not love ferns? The laughing, romping schoolgirl, as she trips leisurely along, anon stops from her journey to pluck them from their hiding places. And even the careful, busy housewife steals away from her weary labors to tend these idols of her affection. It is not merely to the scientific student that they bring unnumbered pleasures, for all in whom dwell a love for the beautiful in Nature render homage to these lovely children of the groves. But it is to the naturalist that they yield their profoundest wonders and most inspiring beauties.

There is no reason why these things should be hidden from minds that move in narrower spheres. Every effort that is made tending to the popularization of science, should be encouraged by every laudable means. Books should be written, not to reflect the erudition of authors, but to render easy and simple, as well as intelligible to the masses, the truths of which they speak. A due amount of pure science is often indispensable and sometimes unavoidable. English writers should adhere more rigidly to the Saxon element of the language and show less preference to the Latin and Greek elements.

Few books of a scientific character are written that fully commend themselves to popular favor. Those that do exist are mostly replete with the dryest details, which are clothed in Latinized expressions. Their tedium is often unrelieved by a single illustration. Not so with the one about which we are writing. In it a happy

medium has been kept in view. It contains enough of science to satisfy, without cloying, the abnormal appetite of the thorough-going scientist; but, at the same time, the popular reader is drawn to its pages by the perspicuity of its phraseology, the simplicity of its arrangement, and the beauty of its illustrations.

I cannot allow the present opportunity to pass unnoticed without making a few favorable comments upon the mechanical part of the work. The excellence of the typography and the superior quality of the paper, which was manufactured expressly for it, are in harmony with the other particulars. The enterprising publisher is deserving of unstinted praise for his part of the undertaking. May this beautiful and matchless work meet with a success commensurate with the wishes of all concerned.

PROTECTION TO NOVELTIES.

BY EUGENE GLEN, ROCHESTER, N. Y.

In discussing the probable result of a horticultural copyright law upon the sale of inferior sorts, we must, of course, consider its permanent rather than its immediate effect. It may be true that while the system is new, and the public are unacquainted with its nature, some ignorant people may be led to believe that the fact that a variety has a copyrighted name is an additional reason for purchasing specimens of it; but it is difficult to conceive that on the start such people can be humbugged any more than they now are; and as even this class now understand that a plow or other implement is no better because it is patented, it cannot be doubted that they will soon learn that the same is true of a tree or plant upon which a copyrighted name is claimed.

What is necessary to protect people from inferior varieties is familiarity with the claims of good sorts; and if we place those having good sorts to offer in a position where they will be reasonably certain of a fair return for so doing, they will not hesitate to incur the expense of familiarizing people with the merits of these varieties. Under the proposed law, a nurseryman holding a copyright upon the name of a good sort would see that all trade for it which could be developed under that name would come to him, and that no such advantage could accrue to the advertiser of it under any other name. Hence he would exhibit its products and advertise its name and qualities in other ways so thoroughly that they would become familiar to

every household in the land. The holder of the name of a poor sort could not afford to pursue this course, because every time it was brought in comparison with better varieties its reputation would suffer; and yet this method of developing a demand for a variety would become, in a greater or less degree, a necessity of the trade. Hence it would become necessary to know that a variety is good before increasing the expense of placing it on the market. Mere novelty would cease to attract attention, and the returns from pressing poor varieties would become so unremunerative that the number of these which would pass beyond the crucial stage of testing, and be brought to the attention of the general public, would be proportionately much less than it now is.

If any one questions the correctness of this conclusion, let him calculate the chances of profit he would have in introducing to the public a dictionary or sewing machine wanting in real merit, in competition with "Webster's" or the "Singer" on the grounds that his book or machine is novel in its arrangement, and cannot be had of other publishers or manufacturers. He will then be enabled to determine, in great degree, whether the proposed law would retard or quicken the sale of "Utah Hybrid" cherry, "Vermont Seedling" peach, "Tree Alpine" strawberry, and other mythical or worthless varieties which are now sold in large numbers to even intelligent farmers who are not familiar with their merits.

Under existing conditions a man does not really press the sale of any variety of trees, plants, or seeds beyond the stage of its novelty, because people learn to know it by its name wherefore the expense of so doing would inure largely to the benefit of less enterprising dealers, who also offer it by this name—genuine or spurious. At that point it must give way to a leader hitherto unknown; and the period during which a leader can be successfully pressed as such, is so limited that it becomes comparatively unimportant whether or not the article possesses actual merits. As illustrating this point, let me say that an intelligent nurseryman who has successfully introduced a variety which he believes to be superior, all things considered, to any of its species going before it, and has brought it to a point where others are now producing it to a limited extent, and a still larger number supplying spurious specimens, recently informed one that he already saw the importance of getting a

novelty in the same species, not because he can hope to get a better sort, but for the reason that he cannot much longer expect to retain the benefits of his advertising of this, and because he must hereafter sell his genuine goods in competition with the spurious specimens referred to. Surely this indicates a vicious state of trade; and yet it is everyday experience.

I have now shown as clearly I as can, without unduly trespassing upon your columns, the nature of and necessity for the proposed law; that it differs radically from, and is not open to any of the serious objections which may be raised against a horticultural patent law; that in all essential particulars it is analogous in principle to the law of trade-marks, which have their foundation in natural equity, and have been recognized and protected in all civilized countries for ages; that while it would prove a stumbling block to rogues, it could not create monopolies, and would not introduce anomalies into the laws or interfere with the rights of anybody; that it would lessen frauds now glaringly prevalent, which from their nature, the circumstances under which they are committed, and the period which must elapse before their discovery, cannot be reached directly, and by elevating horticultural trades in public esteem inure to the benefit of every honest member of those trades; that it would encourage the origination and introduction of new and improved varieties, and lessen the sale of inferior sorts; that it would weaken existing prejudices and stimulate many to take increased interest in the growth of fruits and flowers. If my discussion of the subject has been full, and my arguments sound, the measure would be productive of great good. I may be mistaken; but having clearly set forth the grounds of my opinion, and made at least a good *prima facie* case, unprejudiced people will not believe the measure unwise or impracticable unless its opponents, if any, point out specifically wherein it will fail, and demonstrate the correctness of their assertions. If my reasoning has been fallacious in essential particulars, or if I have omitted to answer vital objections to the proposed law, surely some of your many readers will have discovered it, and be able to point out wherein I am at fault. In view of the importance of the subject, I trust that some one will not hesitate to do this regardless of the consequences to any argument. At the same time I would remind such as may require it, that as the proposed law does not resemble the patent

system in any respect, it will not answer here to set up that as a target, and proceed to ridicule it, as some have done.

I have several times invited opposition. I would have been glad to have encountered it at an earlier stage of the discussion. Thus far I am without an adversary; but I am not willing to believe that the opponents of this measure, if any, will permit the public to enter judgment against them *pro confesso*, as the lawyers say.

EDITORIAL NOTES.

EUROPEAN NOTES BY THE EDITOR—No. 6.—

One of the most striking contrasts between what may be termed the average crowd in England and America, is a certain respectful tone mingled with considerable familiarity on the part of the former. The typical Yankee of the story-books comes at you at once with the air of an old acquaintance. He acts as if he thought that in this world one man is about as good as another, if not a little better; and he sticks his questions right into you without any compunction or apology whatever, as if no one you know has any better right to do it. Not so with the Englishman. He goes in pretty closely at first, but lands a long way off in a sort of cat and mousical way that leaves little room to be offended by the time he brings up. It was in Wiltshire, and he had a tolerably nice beaver at the summit, and a "La Reine" rose (about four inches over) on the lapel of his coat. We had just emerged from the station, and with hand towards his hat, he very politely remarked, "American, I observe, sir. A great many Americans call here, sir." Of course you can only reply, "Indeed!" and he at once responds, "Yes, sir; and we likes 'em, too. They is gentlemen who never bothers about odd sixpences." We found in the long run that our friend was the owner of "flies," and we made up our minds that we knew a thing or two, and that there should be no occasion for any "bother about sixpences." To think you can see this beautiful country by railroad, is a fraud. I found the best plan was to take a "fly" for the day, and go your own road, and suit yourself to your own time. This was my first experiment at "flying." I found our friend of the beaver hat in due time. "How much," said I, "will you charge to take us to the Marquis of Salisbury's? As you remarked, we are Americans, and are perhaps lib-

eral, but we like to know beforehand just what we are to pay." It was twelve miles out, and the bargain was made that for eighteen shillings we should have that "fly" for the whole day, and "we could pay it to the driver" on return. We hand the driver the money when back, who takes it very thankfully, and we close our pocketbook, but are brought up with, "You have not remembered the tiger, sir." "Remembered the tiger!" "Yes, sir; every gentleman remembers the tiger, sir, and I was sure you would like me to tell you, sir, what the gentlemens here does." It is no use, of course, and we half surrender with, "Well, how much is it?" "We allays leaves that to the gentleman himself, sir; but they never thinks, sir, the tiger worth less than five shillings." And the five shillings go, for you cannot forget that an "American never bothers about sixpences." But it is over, you think, and you feel relieved. But not yet, my friend. "There was four puts up, you know, sir, and these cost a shilling each—four shillings." It begins to be rather warm, and you say, "We enquired first what we had to pay, and was told just eighteen shillings." "Yes, sir; its all right, sir; that was for the horse and fly, sir; but every gentleman, sir, pays for his horse when he is fed." It is all done so genteelly, and so politely, that I think the American man comes rather to like these extras at last, and never feels so happy as when he has a "bob" between his fingers just ready to bestow on the first appeal to his "gentlemanship."

But that "fly ride" to Lord Salisbury's was worth all we paid. We passed the monument which told of one of the bloodiest battles between the adherents of the Red and White Roses. Far behind us, towards the great city, we could just see in the horizon the glass domes of the great Alexandra Palace twinkling like a hundred stars in the morning sun. In the fields in every direction were hundreds of mowers at the hay, swinging the old scythes one after another as unconcernedly as if there never was a Yankee mowing machine in the world. Men with forks were turning, and girls and women with hand rakes gathering hay together, just as it used to be in the olden time. It brought up all the poetry of hay-making, and seemed to put our plain matter-of-fact way of disposing of the crop at a sad discount. But of course farming is for money; we were out for a pleasure ride, and had but the poetry to see. All around were country seats, some small and full of art, others

immense estates glorious with the touch of nature. But no matter how large or how small the gardens might be, they were always well cared for. We go through our country, and we see where people have built great houses, and laid out large grounds when they were well off, but now in neglect and weeds. It is still the "style" to keep the house, but no one seems to think he has gone down in society because he lets his garden go down. But here the sign of his status hangs from his garden, and when he lets that go down, he may bid good-bye to his rank, and take "apartments" somewhere. It was certainly among the most remarkable of all our English and French experiences, that a neglected garden, in the sense in which we should understand it, never came once before my eyes. Once I thought I had this unique sight. The gate entered from the public highway. For many rods the gardener took us through rank weeds higher than our heads—much to our surprise, till the old gardener explained that "it be a notion of master's. He think the thieves be fooled, and won't bother themselves to come in after the fruit." And we must say that the garden proper, when we got there, was a model of cleanliness. The currants and gooseberries especially, which thrive so well in the English climate, being sights to see. We ride along the smooth turnpike road. The hawthorns are out of flower, but the Dog rose, which, in spite of the assertion of the books—which give the name to the sweet briar—we look on as the real "Eglantine" of the poets, was in full bloom everywhere by the wayside, and filled the air with a perfume we doubt not fully equaled any that ever floated over "Araby the blest." The colors vary from white to deep rose, and the plants make huge-bushes by the wayside, often four or five feet through. Near these are the blackberries.

"That fruit full well the schoolboy knows,
Wild bramble and the brake,"

the brake especially, or bracken fern as it is sometimes called, which grows in the parks where there is game, in immense profusion, for which it makes a good cover.

We knew at once when we came to the estate of the Marquis, not only by the profusion of this fern, under the huge old oaks, but by the immense quantities of Rhododendrons then in bloom, Laurels (or kind of cherry with huge evergreen leaves) and other things betokening the large landed estates. Besides this a wall of concrete lined the main road for miles along the

estate. These walls are cheaply made of gravel mixed with the slacking lime, and then is put on as so much mortar between a frame of boards. This was a great failure, probably from the fact of the lime not having been properly slacked in the operation, or of too much clay being in the gravel, and the weather had eaten large quantities away, requiring, evidently, constant patching to keep it up. Those with me thought it an evidence that concrete walls were a failure; but in other parts of England I saw them "solid as a rock" after thirty years of use. It strikes an American strangely, after being accustomed to so much forest variety in his own country, to see so much sameness here. In almost all the woodland you come to it is the same old tree—beautiful enough in itself, but when continually repeated, as it is, causes us to exclaim, that "everlasting oak!" With so vast a field to choose from, the absence of variety in English planting is very remarkable. That I am not alone in this opinion, I may be pardoned, I hope, for quoting from a private letter from Sir Joseph Hooker, written since his return from America, and who says, "It seems strange to me that your beautiful American trees are not more appreciated by our people. I believe they in time will be, though I may not live to see them grown up in grandeur as they are with you."

But our "Tiger" announces that we are at Hatfield, and we are set down at the ponderous old oak gate. After a ring from a bell which might serve for one of our churches, a sort of port-hole flies open, and we hand our cards to the stately porter, with an inquiry for our old friend, the gardener, whom we knew among our associates; it did not seem so very, very long ago. But it was the same old story, "dead or missing;" and after the good old man had gone back over about a dozen names, we gave it up for a bad job, and not without some wonder at the many changes, for we had looked on a gardener's situation in England as one to be held according to the strict interpretation of the "tenure of office act." However, we were directed to "Mr. Norman," whom we found a comparatively young man, and, as it is a pleasure to say, with a full share of that intelligence which gives such a charm to the best Old World gardeners, and makes their company appreciated by what is called in the Old World "the highest in the land." The vegetable garden comprised about seven acres, had been but newly laid out, and had no box as yet; and in its unfinished con-

dition it would perhaps be unfair to say that we in America can grow vegetables far better than can be grown in England and at half the cost; for no doubt much better results will follow when things are put to rights: but when we get to the forcing houses we see sights that make an American look out of all the corners of his eyes at once. Of course, with our thousands of miles of territory, where, as I have seen, almost zero in Chicago, with oranges and scarlet sages two days after along the Gulf, there is not the same necessity for forced fruit; but this does not take from the merit due to the wonderful skill of the English gardener in forcing house fruit. Here there were strawberries—not by the single one sliced to go all round, as one might suppose, but hundreds on hundreds, of a size which would not disgrace the fine fellows our Dr. Knox used to raise, hanging from the sides of the pots on the shelves or lovingly reclining on the earth in the pots in every direction. Strange, very strange, it seemed to me from a country where we are not satisfied unless we have a new kind of strawberry every year or two, to hear Mr. Norman avow that the best kind he had yet was the "Keen's Seedling," a variety which may soon advertise its "centennial show." But there were "Sir Charles Napiers", very large and handsome too, but not to be depended on like the Keen." The grape houses occupied perhaps 300 feet of length of glass; and though the fruit was good for so early a time of the year, they were not superior to what we have seen among our own June fruit crops under glass. The Foster's Seedling Mr. Norman considers the best white for early forcing. He also praises highly the Madresfield Court, a long purple-berried variety, which he regards as quite as good as Black Hamburg, and which ought to be high praise. The plants were also very interesting. There may have been about two dozen houses in all; everything good, but nothing so superb as the perfect pot strawberry culture. The park and grounds embrace about 1,500 acres, and under the gardener about thirty hands are regularly employed.

Almost all these old places are laid out on the same general plan—straight avenues of trees, often a mile or more in length, down which you look through the vista from the windows of the house. These trees were of Linden, and with the peculiarity which struck me strangely in many trees of England of having huge bulbous bases. Our trees swell a little at the ground,

but here they commence four or five feet from the ground to swell, and in these the lower parts of the trunks were double the size, in many cases, of the upper portion. As already noted, the trees in England do not grow near so tall as ours, but they spread more; and I should judge these Lindens were not more than from forty to sixty feet high. I measured an oak here which proved 18 feet round, and yet could not be more than 50 feet high. There is nothing more interesting about these old places than their associations with remarkable events in history. It was here that Elizabeth, afterward Queen of England, was kept a sort of prisoner during her sister Mary's reign. She was very fond of gardening, and during her residence here she gave her taste free scope. There is a walk lined with Lindens which have been sheared and clipped into arches and alcoves, planted by her direction, and which is still called Queen Elizabeth's Walk. But their comparatively youthful age seems to me to indicate that they may have been set out in much later times. A tree which she did plant, an oak, is guarded with zealous care by a fence around it, though but an old stump now. Prince Albert set out two near it, one for himself and one for the Queen, which are thriving, and also are protected by a fence. There is also on the ground a queer old maze, in which it is said the Princess Elizabeth loved to wander. This is of Yew, while the one I saw at Hampton Court was of Beech. I should think after one journey through such a place the novelty would wear off. At least, on this occasion I was willing to sit on the grass and admire the "gowans fine," while my companion amused herself in the tangled paths; and I cheerfully submitted to her decision that I only remained outside for fear of being lost, and had not as much courage as she had. It is said that in these grounds, while in her favorite garden walk, Elizabeth received the news of her sister's death, by which she walked out one step from this pretty prison to the heavenly throne.

It is one of the pleasant characteristics of the English aristocracy, that they take pleasure in sharing with the rest of the world the treasures of history and of art that they may possess, and it is rarely that a respectable person fails to gain admittance to any part of the establishment when the family is not at home. On the present occasion the only requirement was that we should leave our cards for the inspection of the Marquis, and enter our names in a book in the grand hall.

As everywhere we went, so here we found traces of America; for in the attendant's hand were cards from one of our Philadelphia neighbors, and of Mr. Munn—we supposed of the *Scientific American*—New York. Everything that may remind one of the past is religiously preserved; even to Queen Elizabeth's silk stockings—the first pair ever known in England—and her old garden hat. If I mistake not, the Marquise was created early in the seventeenth century; and as the portraits of the gay lords and fair ladies hang everywhere on the castle walls, and there are mementoes of innumerable descriptions in every direction of all these distinguished people for these past three hundred years, the only regret one feels at seeing them is that he cannot have a few weeks instead of a few hours to study them.

Hatfield House makes no pretension to any superb gardening. There are many places far superior in these respects; but it is an average of the general run of these comfortable old homes, and so we selected it.

It was my purpose to take about three or so of these old mansions as a type of the grounds of the older section of England's nobility; but what can I do in a little magazine which comes out but once a month, and Methuselah's experience not likely to be repeated in any case. I cannot close the chapter on this branch without a brief sketch of the home of the Jenkinses—a name historical in connection with English politics, and of which family the late Earl of Liverpool was so widely known; Buxted Park, in Sussex, and now in the possession of Colonel and Lady Catharine Harcourt—Lady Catharine being the daughter of the late Earl.

I have already noted how far away from school I was in my boyhood days, and how many difficulties were in the way of obtaining an education in the higher branches of intelligence. I often look back gratefully to the friends who kindly aided me under these difficult circumstances, and there are few whom, in after life, I felt so much indebted to for their warm and substantial encouragement, as to Colonel and Lady Harcourt. The last letter of good wishes, when a boy I resolved to leave my native land, was from them, and it was naturally grateful to find, on my landing in England now, a letter awaiting me, inviting me to spend a few days at Buxted Park. Lady C. had for some time been an invalid, and even intimate friends had rarely been admitted to her presence of late, and I thus felt it the

more an honor to be allowed to see and talk with my early benefactress and friend.

The estates are very large—I am almost afraid to say how large, for fear I have forgotten accuracy, but I believe about 15,000 acres. The large house is delightfully situated among particularly grand old trees, and it is no wonder that it was a great favorite with the Dutchess of Kent, and the Princess—afterwards Queen Victoria—who frequently visited there. Most of the trees that I met with in England gave the impression of under size in comparison with ours, but on this estate were some of the most remarkable trees that I saw in all England. In the old churchyard near the mansion house, is a Yew tree which measured twenty-six feet in girth several feet from the ground. I took the trouble to make an accurate measurement of its height, which was fifty-nine feet, and the diameter or “spread” of the branches was seventy-five feet across. I have no doubt the tree was much older than the oldest of the mammoth trees of California. As in most of the old English places, a grand vista formed by a double line of trees leads from the house. In this case these were of Elms, and were perhaps eighty feet high. I measured an average one, and found the trunk fourteen feet round. Many specimen trees on the grounds were of majestic proportions. A Beech tree, twenty-three feet in circumference, was quite remarkable, and a measurement near the ground—as so many measure—made it forty feet! The huge head was ninety feet across. Among English Ashes, twelve feet in circumference was a common measurement; and as they had had room to develop their heads for perhaps hundreds of years (for trees live to a great age in England, as compared with ours), they were perfect models of beauty. It is strange how much the climate of England favors long life in trees. One of the earliest introductions of our Locust is here eight feet round; but its life is nearly gone. Though the tree is native to our own country, I never saw it in such wonderful beauty as it exhibits in England and France. And then the Rhododendrons! On this estate they were truly grand. Specimens sixteen feet high, and nearly as wide, were common. They are planted here in immense quantities; indeed natural sown seedlings abound. Their favorite place of germination seemed to be under the coniferous trees. I lifted the branch of a beautiful Deodar cedar, in order to measure the trunk, and found seedling Rhododendrons in thousands beneath. On my own grounds I have an Abies

Pindrow, which I have been twenty years getting up to three feet high, and I could not but so far envy a climate which gave one here twenty-five feet. What a beautiful thing it is with age! The habit is pendulous as it grows. The Turkey oak, with its beautiful spread of branches, makes a grand object. I afterwards saw larger ones on other estates in England, but these—one nearly ten feet round—were large enough to be remarkable. One of the most remarkable objects in the tree line is a Silver Fir—*Abies pectinata*—which was thirteen and a half feet round, as perfect in form as we generally see this beautiful tree; but at five feet from the ground a huge arm extended itself in a horizontal direction. I suppose it was an accident in its younger days; but I wonder people do not often make such accidents on purpose, so as to have such picturesque objects as the trees grow.

I have already remarked on the general scarcity of American trees in English gardening. It was a pleasure to find more than usual here. Butternuts, Catalpas, Red Oaks, and others showed that we were quite at home. An *Abies nobilis*, some fifty feet high, was very beautiful, and the Douglas Spruces and other representatives of the conifers of our western coast, made me wish our Atlantic district would grow things like these.

The flower-beds here, as is generally the case in most of the old English gardens, are on a complex geometrical plan, when near the dwelling, as more in keeping with architectural design. The more natural styles are reserved for the more distant parts of the grounds. In the geometrical gardens but one, or at best a few kinds are grown in each bed, arranged according to harmonies. The plants for these are selected by Lady Harcourt, as is the usual practice with cultivated English ladies, and the gardeners see to having all the kinds ready by bedding time in Spring. Hardy ferns are a great delight to Lady H., and the Fern garden is one of the attractions of Buxted Park. It is arranged as a rockery, in a piece of wood, with walks through in every direction, affording easy access to all. Here were many hundreds of kinds, species and varieties, all plainly and accurately named. I made here the memorandum, that while there were many things so beautiful in England our climate and circumstances would deny to us, there was no reason why any one who had a piece of woods should not have a hardy fern garden; and I made a resolve when I returned to my own land that I would have one for myself at any rate.

I had thought to give three sketches of large estates in this chapter, but it is already too long. I may perhaps yet give the third; but there are public parks, botanic gardens, cemeteries, woods and forests, and numberless other things I thought I would like to give brief sketches of, and all before Spring, when I may again fly away somewhere.

Since writing the above, the papers tell of the death of the good Lady of Buxted Park. An

never have been his task. He believes that in his humble way his work has given pleasure to thousands, and who will therefore share with him his sorrow at her death.

A BOGUS AGENT.—A man calling himself A. M. Waters and other names, professing to be an agent for the GARDENER'S MONTHLY, has fleeced a number of poor gardeners by offering premiums as inducements, worth about seven dollars, for a \$2 subscription. Of course, every one who reads



BEGONIA ACHRNE.

editor's life is not his own. Twenty years of association with his readers make a history that might be personal, partly theirs. In this view, the editor of the GARDENER'S MONTHLY felt no hesitation, in the former part of this sketch, in expressing his deep sense of obligation to Colonel and Lady Catharine Harcourt for their early countenance and encouragement, and without which this GARDENER'S MONTHLY might

the MONTHLY knows we never offer "shears" or any thing else as "premiums," and it is hardly worth taking up room by a "warning" here. We fancy the rogue aims to be something of a wag, as he proposes the gift of a pair of shears to his victims. It is strange that any one will trust \$2 to a total stranger before even the shears are in hand; and only that we are told hundreds have done so, we could not believe it.

CATALOGUES OF JAS. VIETCH & SONS, CHELSEA, LONDON.—The commercial literature is so voluminous that it is only in exceptional instances we can afford space to enter into details. The leading nurserymen not only spend im-

beautifully illustrated. Messrs. Vietch are among the pioneers in introducing the new half hardy tuberous rooted Begonias, and which have recently attracted so much attention in our magazine, in view of their probable adaptation



BEGONIA KALLISTA.

mense sums in obtaining everything valuable, but also largely in instructing the people. Here before us is a set of catalogues which are really books beautifully printed, and which altogether make two hundred and thirty-seven pages, often

to out-door summer gardening. That our readers may compare the American varieties with those being introduced into English gardens, we give with this illustrations of two new ones from Messrs. Vietch's catalogue.

TREES FOR PUBLIC WORK.—Professor C. S. Sargent, as we see by the Boston papers, is doing Horticulture good service by showing Bostonians how much they have to pay for the lack of wisdom. Instead of going directly to the nurseries, and finding for themselves where they can get things the cheapest and the best, it appears the Boston City Fathers, like their brethren elsewhere, are attracted by pretty picture books, and smooth tongues, which come before them, and kindly "save them all trouble"—for three prices on original cost! In addition to this evil, it is only the commonest kind of trees that are bought in this way, as it is only the overstocks doomed by the regular nursery trade to the bon-fire that get "pushed off" by this personal urgency or agency, and thus few of our rare or beautiful trees get a place in the public works. In this category of silly public officers, we must, however, exclude the Central and Prospect Parks of New York, when under the control of F. L. Olmstead; the Buffalo Parks, the Board of Public Works at Washington, and possibly a few others which employed purchasing agents of the highest honor and tree knowledge who were above receiving "commissions," or any other bribes for sales, and the result is, these places have trees which for rare value, and in the lowness of their cost, compare favorably with the trees of any public gardens in the land. Robert R. Porter, in a recent paper on "Public Debts," says that the "trees in most of our public parks have 'steal' written all over them." We are willing to believe that it is as often ignorance or indifference as "steal;" but in any event they are most disgraceful, and we again thank Prof. Sargent for his good offices in trying to induce a better state of things.

SYLVICULTURE.—By Hon Eli K. Price. This essay on forest culture is a paper read before the American Philosophical Society, and by them published in the *Transactions*. Mr. Price has passed his three score and ten, but is still hale and hearty, and has spent his many years in great activity for the public good. As one of the Board of Commissioners of Fairmount Park, its tree-planting interests have mainly been under his control, and in every way possible he has thrown the weight of his great influence into the cause of tree culture. The great botanist Michaux left a sum of money to Philadelphians for tree-planting, and Mr. Price shows in this essay how much good it has done. He is a believer in the theory that trees and the rainfall are

intimately connected, and enters into the historical questions connected with that view. This, indeed is the key-note of the essay. He shows what has been done in some quarters for tree-planting, and points out the good that will follow from a more extended practice.

THE SCIENCE OBSERVER, Boston, a monthly published by the Amateur Scientific Society, at 50 cents per annum. Astronomical matters receive particular attention.

THE AMERICAN NATURALIST has been removed from Boston to Philadelphia, having been purchased by some Philadelphia scientists. It is now under the joint editorship of Messrs. Packard, of Salem, Mass., and Cope, of Philadelphia. The January number shows that the scientific value of the magazine has not suffered by the change, while the publishers' department is as perfect as need be. McCalla & Stavely are the new publishers.

THE GAME OF BOTANY.—By C. W. Seelye, Rochester, N. Y. This is a game of playing cards, in which botanical characters are used, and it serves alike to while away a pleasant evening in amusement, and conveys instruction at the same time. We thought the best test would be to submit the cards to a nest of children, and as in a few minutes they were very much absorbed in it, we feel bound to say the idea is a great success.

ACKNOWLEDGEMENTS.—John R. Anderson, of New York, is issuing handsome little books, giving the "Little Folks" described in Dickens' works. "Little Paul," of Dombey & Son, is now on our table.

THE ILLUSTRATED ANNUAL OF RURAL AFFAIRS, by J. J. Thomas, published by the *Country Gentleman*. This is the twenty-fourth year of the appearance of this very useful serial.

THE AMERICAN BOOKSELLER is a list of books—almost everything in the book trade—that may be had of the American News Co., New York. It gives copies of some of the illustrations contained in the leading works, and which make this catalogue itself a beautiful book. It is sold at a nominal price—30 cents.

VICK'S ILLUSTRATED MONTHLY MAGAZINE.—This, which has long been published quarterly as *Vick's Floral Guide*, is to be henceforth issued monthly under the above title. The first number is now before us, and we need scarcely say to those who were familiar with it in its old form, that it is a very useful publication. Mr. Vick is full of

life and enterprise in his business, and has the good wishes of all in whatever he undertakes.

H. E. CHITTY.—This gentleman, formerly superintendent of the Bellevue Company, of Paterson, and well known to our readers, has commenced business for himself, as a florist, in the same town. The Bellevue Company continue the old business as before.

DR. C. C. PARRY.—This indomitable botanical explorer is about to make a collecting tour through Mexico.

COL. M. P. WILDER.—It will please our readers to learn that this veteran horticulturist is still in excellent health; at least we judge so from the full account the Boston papers give of his address before the recent annual meeting of the New England Historical and Genealogical Society.

MR. BRIGGS, OF MARYSVILLE.—Almost every one who has followed the development of California fruit growing, is familiar with "Brigg's Péach Orchard," at Marysville, one of the pioneers of this branch of horticulture in California, and will learn with regret of his decease, as we note by a recent California paper.

THOMAS J. MACKENZIE.—We regret to announce the death of Mr. Thomas J. Mackenzie, the well-known florist of Philadelphia, who died on the 6th of January, in the 40th year of his age. He was the only son of the late Mr. Peter Mackenzie, who was one of the earliest and most enterprising of Philadelphia florists, to whose successful business the son succeeded. Mr. Mackenzie was elected a member of the of the City Council of Philadelphia last year, and died on the day appointed for taking his seat in that body.

DR. J. P. KIRTLAND.—It it to be expected that, now its twentieth year, many of the earlier friends of the *GARDENER'S MONTHLY* should be passing away. Our venture had no better friend than Dr. J. P. Kirtland, and, though full of

years and honors, we learn of his decease with profound regret. His private letters of encouragement were always welcome; and he loved to dwell on the welcomeness of the *MONTHLY*, as reminding him of the city in which he received his medical education. The Mass. Horticultural Society, ever alive to the honor of Horticulture all over the Union, recently passed resolutions of sorrow in his behalf, and we hope to give in our next the preparatory remarks of Col. Wilder, as a brief but excellent condensation of the life and services of our deceased friend.

SCRAPS AND QUERIES.

FLORAL DECORATIONS.—A New York publisher very kindly sends the following note: "Floral Decorations for the Dwelling House," etc., by Annie Hazzard, "American edition revised. London and New York, Macmillan & Co. Retail, \$1.75. In reply to Mrs. R., page 12. *Gardener's Monthly*, Jan., 1878: Not a bid for a trade, as we don't have it."

SHITTIM WOOD.—Thoughtlessly, while writing last month, we gave *Acacia Farnesiana* as the probable tree, which, as we are kindly reminded by a correspondent, is a native of the New World. If we had referred to works, instead of trusting the memory, as we ought to have done, it would have saved us the mistake. That an *Acacia* really existed in Egypt seems to be proved by the researches of Braun, as recently translated from the German in the *Gardener's Chronicle*. Bruce, in his *Travels*, remarks that "the *Acacia* in the Thebaid seems to be the only indigenous tree." Dr. Shaw, another Eastern traveler, speaks of the *Acacia* as growing in Arabia Petraea, and suggests that it may be the *Shittim Wood*. As we knew the *Acacia* grew there, and that it agrees with accounts of the wood, it is probably correct that the *Acacia Nilotica*, or *Acacia vera*, of Willdenow, is the real *Shittim Wood*.

HORTICULTURAL SOCIETIES.

COMMUNICATIONS.

KANSAS STATE HORTICULTURAL SOCIETY.

BY H. E. VANDEMAN, GENEVA, KAN.

The eleventh annual meeting of this institu-

tion was held at Parsons, on the 11th, 12th, and 13th of December, 1877.

Several gentlemen from Missouri, and a lady from Illinois, favored us with their presence, and participated in the exercises of the meeting. Each year new recruits are enlisted, and we hope the Society's field of usefulness is enlarged.

Only eight years ago the place of meeting was the home of the Osage Indians. Consequently the orchards are young, and but few apples could be shown that were grown in the immediate vicinity of Parsons. But the older counties were not behind in displaying the products of their orchards for the pleasure and instruction of those attending the meeting. I think there were perhaps no finer apples shown at the Centennial Exhibition by Kansas than were seen upon the tables of the Society here at home.

One of the most interesting subjects during the meeting was "The New Early Peaches in Kansas," which was introduced by a special report by a member of the Society, and discussed at length by nearly every one present. Amsden, Alexander, and Early Beatrice take the lead now, as the newer varieties have not yet fruited here. There are at least fifty new seedlings reported from different parts of the State that are perhaps as good as Amsden or Alexander. Do not be surprised if Kansas takes the early peach prize yet.

The result of the discussion on the cherry was similar to that of former years—that the Early Richmond and other varieties of the Morello family are the only kinds that succeed in our State. All the Mazzards, the Biggareau, and even the Kentish varieties are almost a total failure here. The trees die from sun-scald, or some such disease.

Vegetable gardening occupied an important part of the meeting. The use of the horse was strongly urged in place of so much hand-hoeing, as is common. Even in our rich, and in some cases loose soil, underdraining is thought to be almost indispensable to a good garden.

There were many valuable papers on the various subjects connected with horticulture, which were quite fully discussed. All these will appear in the report of the Society for 1877, which will be published within a few months; and if any of the readers of this little sketch feel interested enough, and will send to G. C. Brackett, Lawrence, who is secretary, he will receive a copy of the same as soon as published.

The officers elected for the current year are: for President, Prof. E. Gale, of Manhattan; Vice-President, Robert Milliken, of Emporia; Secretary, G. C. Brackett, of Lawrence; Treasurer, F. Wellhouse, of Leavenworth; Trustees, H. E. Vandeman, of Geneva; E. P. Diehl, of Olathe; G. Y. Johnson, of Lawrence.

EDITORIAL NOTES.

ADDRESS OF MARSHAL P. WILDER.

(Continued from page 31).

THE PERFECTION ATTAINED IN THE CANNING AND DRYING OF FRUITS.

The canning process has been brought to great perfection, and that of drying promises to become even more useful, when it shall have arrived at its utmost development, possessing the great advantage for transportation of reducing the weight three-fourths or more by the removal of water, and rendering it capable of shipment to all climes, and of being preserved perfectly for years. We need not fear an overstock, as many new ways will doubtless be devised for its use. The extent of this business is already immense, but I have been unable to procure any statistics. Six canning firms in California employ two thousand women and children, and turn out from one and one-half to two millions of dollars yearly in amount of goods. Figs and grapes are being extensively dried in California. The quantity of raisins already produced annually is estimated at 400,000 pounds or more. Although not yet equal in quality to those imported from Europe, it is believed that with further experience they will be produced of the highest excellence. Of dried fruits there were cured in that State, by the Alden Company alone, seventy-five tons. As time advances there will doubtless be many other modes introduced for utilizing any surplus of abundant seasons. Well does a writer remark, "There ought to be a score of elegant and nutritious preparations in all our markets, thus adding to the variety of fresh and prepared fruits, and superseding the wretched pastry and other abominations now in vogue."

REVENUE FROM FRUIT CULTURE.

The foreign market for our fruits is now as well established as that for our wheat. Competent judges unite in the opinion that the European and Australian markets are prepared to take increasing quantities of fresh and dry fruit if landed in good condition. Australia and Germany will consume immense quantities of dried fruits, but England prefers fresh fruit.

There have been shipped to foreign ports from this country since last October three hundred and ninety-six thousand barrels of apples. In December last (1876), there were sent on an average over twenty thousand barrels per week, or ninety thousand barrels for the month. These consisted mostly of the Baldwin, Rhode Island Greening and Newtown Pippin. The English like red apples best, and so it has been from the reign of Henry VIII, red apples generally commanding the best price. A decided preference is given to American apples. The English market can take from twelve to fifteen thousand barrels per week, and shipments sell readily, varying in price from three dollars and fifty cents to ten dollars per barrel.

(To be continued.)

THE
GARDENER'S MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

Vol. XX.

MARCH, 1878.

Number 231.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

This is particularly the month to pay attention to the hardy annuals. The sooner they are sown, the finer they will flower; that is, provided they are really hardy. Tender annuals, such as *Globe amaranthus*, *Balsams*, &c., rot if they are sown before the weather becomes quite warm. The seedmen's catalogues usually distinguish these classes for their customers. In sowing annuals, the soil should be slightly stirred with a broad-bladed knife or trowel; and after the seeds are sown, they should have a little soil sprinkled over them, about one-sixth of an inch deep, according to the size of the seeds; barely enough to cover is all that is required. Failures usually arise from the seeds being buried too deeply. Failures also frequently occur from the soil with which the seeds are covered being too stiff or clayey, "baking" after a rain. Light sandy earth or decayed vegetable loam from the woods should be employed for the purpose. Stick a peg in where the seeds are sown, so that when turning out the plants in May from pots, the annuals will not be disturbed. Also take care to preserve the names of the kinds. This is a great part of the interest in flower-garden.

Walks should now have their spring-dressing—the verges cut, and a thin coating of new gravel laid on. Before putting on the new, harrow up the face of the old gravel with a strong iron-toothed rake. Roll well after the new is laid on.

This is the proper season to lay down box-

edgings. To make them properly, the soil along the line of the edge should be first dug, and then trod very hard and firm, so that it may sink evenly together, or the line will present ugly-looking undulations in time. Rooted plants should be employed; cuttings are sometimes used, but frequently die out in patches; a good edge can rarely be made from them. The plants should be set pretty low down, leaving the plants, when set, one or two inches above the soil, according to their stockiness. Sometimes box edgings are laid around beds formed in grass. When so, a few inches of clear ground should be kept clean between the grass and the box, or the weeds will be so intermixed with the box, after awhile, as to render it a nuisance.

Herbaceous plants do badly if several years in one place. Every second year, at this season, take up and divide them. Sow as soon as possible some hardy annuals. The earlier they are in the ground after the frost leaves it, the finer they bloom.

Ornamental hedges judiciously introduced into a small place, add greatly to its interest. No easier method offers whereby to make two acres of garden out of one in the surveyor's draught. The arbor-vite (*Chinese and American*), *Hemlock*, *Holly*, *Beech*, *Hornbeam*, *Pyrus japonica*, *Privet* and *Buckthorn* may be applied to this purpose.

Shrubs are not near enough employed in planting small places. By a judicious selection a place may be had in a blooming state all the year; and they, besides, give it a greater interest

by their variety, than is obtained by the too frequent error of filling it up with but two or three forest trees of gigantic growth. Plant thickly at first, to give the place a finished appearance, and thin out as they grow older. Masses of shrubs have a fine effect on a small place. The center of such masses should be filled with evergreen shrubs, to prevent a naked appearance in the winter season.

Many things that appear frosted a little at the tops should be severely cut down; it will prevent disappointment in the end. Shoots that are injured in winter—especially in the case of the rose—will often have just sufficient vigor left to enable them to put forth leaves, and sometimes even go so far as to attempt to flower, and then die off suddenly under the first hot sun.

COMMUNICATIONS.

RIBBON BEDS.

BY C. J. BJORKLUND, HAMPTON, VA.

Of all shapes of beds, the circle is preferable to decorate as ribbon bed. If there is any such in the center of a crosswalk, or other central place, it should be chosen. Fig. 4 represents a bed twenty feet in diameter, for which we will propose a choice as follows:

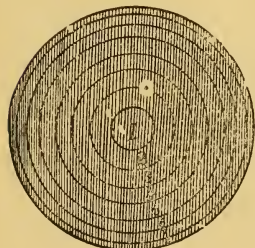


Fig. 4.

SET II.—1, *Eucalyptus globulus*; 2, *Canna zebrina*; 3, *Abutilon striatum*; 4, *Dactylis glomerata* fol. var.; 5, *Coleus Verschaffeltii*; 6, *Centaurea gymnocarpa*; * 7, *Cuphea platycentra*; and 8, *Geranium Happy Thought*.

SET III.—1, *Nereum Oleander*; 2, *Salvia splendens*; 3, *Salvia splendens*; 4, *Amaranthus melancholicus*; 5, *Vinca rosea*; 6, *Cineraria*

maritima; 7, *Chamaepeuce cassabonae*; and 8, *Pyrethrum parthenifolium aureum*.

SET IV.—1, *Cannabis gigantea*; 2, *Canna Marechal vaillant*; 3, *Zea japonica* fol. var.; 4, *Salvia coccinea*; 5, *Centaurea gymnocarpa*; 6, *Geranium General Grant*; 7, *Achyranthus Gilsonii*; and 8, *Lobelia speciosa*.

SET V.—1, *Ricinus sanguineus*; some of this genus grow almost too large, especially common, and are rather too rough for foliage-beds, single specimens in a sheltered situation are good; or may be put in occasional openings in the shrubberies. 2, *Nereum Oleander*; 3, *Salvia patens*; 4, *Salvia patens*; 5, *Achyranthus Lindenii*; 6, *Salvia candidissima*; 7, *Altenanthera versicolor*; and 8, *Cerastium tomentosum*.

SET VI.—*Gynerium argenteum*; 2, *Lantana*; 3, *Lantana*; 4, *Coleus Emperor Napoleon*; 5, *Cineraria maritima*; 6, *Coleus Queen Victoria*; 7, *Ageratum album nanum*; and 8, *Altenanthera spatulata*.

SET VII.—1, *Solanum Warszewiczii*; 2, *Caladium esculentum*; 3, *Amaranthus melancholicus*; 4, *Cineraria maritima*; 5, *Achyranthus Verschaffeltii*; 6, *Geranium Mrs. Pollock*; 7, *Cuphea platycentra*; and 8, *Lonicera aureo reticulata* to be pegged down on the border.

SET VIII.—1, *Arundo donax variegata*; 2, *Canna discolor*; 3, *C. tricolor*; 4, *Achyranthes Lindenii*; 5, *Vinca alba*; 6, *Geranium Luicus*; 7, *Glaucium corniculatum*; and 8, *Tropaeolum star of fire*.

SET IX.—1, *Arundinaria falcata*; 2, *Salvia splendens alba*; 3, *Salvia splendens alba*; 4, *Coleus refulgens*; 5, *Artemisia Stelleriana*; 6, *Chamaepeuce cassabonae*; 7, *Santolina incana*; and 8, *Altenanthera paronychioides*.

SET X.—1, *Zea gigantea*; 2, *Solanum purpureum*; 3, *Solanum purpureum*; 4, *Abutilon vexillarium variegatum*; 5, *Coleus Verschaffeltii*; 6, *Geranium Mountain of Snow*; 7, *Altenanthera versicolor*; and 8, *Caprosma Baueriana*, etc., etc. The whole to be kept in a pyramidal shape by trimming, and not allowing the leaves of either riband to interfere with the other.

Fig. 5, a Terrace border, and a scale of an eighth of an inch to two feet, may be decorated as follows: 1, *Lobelia speciosa*, bordered by *Pyrethrum parthenifolium aureum*; 2, *Lobelia Paxtoniana*, bordered by *Altenanthera versicolor*; 3, *Coleus Queen Victoria*, bordered by *Ageratum Mexicanum nanum* and *Santolina incana*; 4, *Coleus Verschaffeltii*, bordered by *Centaurea candidissima* and *Altenanthera*

*This beautiful plant has, wheresoever I have seen it in this country, shown a disposition to rot during the summer, and it is therefore risky to use it in a ribbon bed, where if only a few spoil, the whole effect is lost, but perhaps does better in other localities.

spathulata, &c., in different sets according to supply of plants; 5, is graveled paths, and 6 a two feet wide sod border.

Fig. 6, a ten feet wide border on the edge of a large shrubbery. 1. *Phalaris arundinacea*; 2.

THE GERMAN AND THE AMERICAN GLOBE ARBOR VITÆS.

BY J. M.

These two Globe Arbor Vitæ are now comparatively common around Philadelphia, several

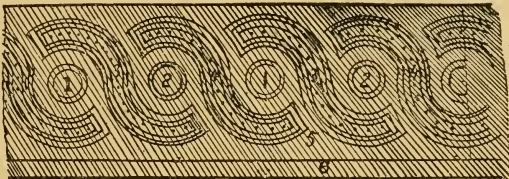


Fig. 5.

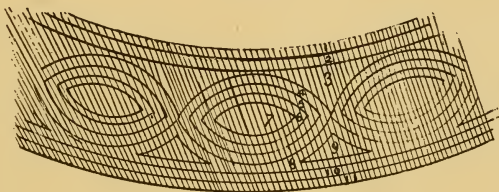


Fig. 6.

Perilla Nankinensis; 3, *Geranium Chun der Sen*; 4, *G. Lass O' Gowrie*; 5, *G. Crimson King*; 6, *G. Golden Fleece*; 7, *Coleus Emperor Napoleon*; 8, *Pyrethrum parthenifolium aureum*; 9, *Lobelia Blue Stone*; 10, *Mesembryanthemum cordifolium* var.; and 11, *Echeveria secunda*.

THE IVY IN NEW ENGLAND.

BY J. C., CHELSEA, MASS.

In a communication in the December number, it is stated that the Ivy is not to be depended on as being hardy (even in the latitude of Philadelphia).

One of our hard winters a few years ago, was very severe on evergreens (but this was an exceptional season); some of the Ivies suffered at that time, among which were luxuriant plants covering a brick building three stories high, which had withstood our hard winters in Charlestown, Mass., for upwards of twenty years before that time. I have also seen it growing luxuriantly on some of the churches in Brooklyn, N. Y., without the least care, and in a private place in the neighborhood of Boston, a low wall is completely covered with it by a little care being taken with it.

nurseries having distributed them extensively thereabouts. The German variety *Thuja pumila* is a stronger grower than the other, and is of a darker green, but it is not so compact a grower. The American *Thuja globosa* is preferred by many because of its more globular form; though if one's grounds are of fair size there will be plenty of room for both. These beautiful Arbor Vitæ are not near so well known as they ought to be. Nurserymen complain that, like many other nice things, they do not pay to raise, as the average customer is too much inclined to value their products by their size, and not according to their rarity, nor the time taken to produce them. Hence fast-growing trees pay the best, and rarer ones, if of slow growth, are in a measure discarded.

THE RAPID PROGRESS OF OUR HORTICULTURE.

BY WALTER ELDER, PHILADELPHIA.

THE MONTHLY will now be well freighted with advertisements enlightening its readers where and how to buy; and especially instructive as showing the rapid progress which horticulture has made since the establishment of this magazine. In the nurseries, there are the vari-

ous species of useful and ornamental herbs and trees from every clime in the universe, all fit for sale. Many of the seed and implement warehouses are towering temples of greatness, and stored with seeds of the most improved species and varieties suitable for culture in all parts of our extensive domain. The hand-tools and machines for man and horse are of the latest inventions and improvements to lighten, cheapen and facilitate the labors of field and garden. The ingeniously constructed and handsomely finished rustic designs, to ornament and diversify the garden, the parlor, and the park, are as curious as they are beautiful. In herbs and trees, seeds and implements, curious ornamental designs, dried flowers and grasses, cut flowers and floral decorations; flowers for Winter, flowers for Summer, and fruits for all time! The reading columns of THE MONTHLY afford a profitable study, but scarcely less so are the advertising pages. It is gratifying to those who know how highly floral taste is estimated by intelligent Europeans, to note how much we are advancing in the same directions; and nothing shows how this is going on more than the numerous advertisements in the GARDENER'S MONTHLY.

RHODODENDRON OCCIDENTALIS AND PICKERINGIA MONTANA.

BY MR. J. B. HICKMAN.

These are two of the most beautiful flowering shrubs of California, and are found on the summits of the low hills to the north of the bay of Monterey, generally among other shrubbery, but in the shade.

The former is deciduous, the latter evergreen; the former bearing large masses of sweet-scented white flowers which are often shaded with yellow and rarely with pink, growing in rather dry ground it sends down large deep roots, which supply it with abundant moisture, though blooming in a rainless Summer. It sends up numerous shoots from a knotty root crown, and from its appearance would seem to be hard to transplant. My experience, however, is to the contrary; for, after hacking a plant to pieces with an axe, I managed to get a few stems, each with a chunk of the crown and a stray rootlet, and after being carried two days on horseback, they were potted in old cans; now, a year afterward, they have filled their cans with a mass of fine roots, and having just shed their leaves, show a fine lot of buds for next year.

The Pickeringia blooms similarly to Swain-

sonia, but the flowers are much brighter and the racemes longer. I believe it blooms six months in the year, and where it does well is very handsome, often growing eight feet high; its leaflets are about the size of those of the Clianthus and are glaucous green, the stem is beset with thorns, and if the plant would submit to trimming, would make a fine hedge. I have been able to find but three seeds in several years experience with the plant, though as its immense truncate roots seem to sprout freely wherever they are exposed, I presume it might be propagated by the root.

ADDITIONAL NOTES ON THE AILANTHUS.

BY B. F. L., PHILADELPHIA.

Your Bridgeport correspondent who, I notice, still writes to you regarding the merits of the much abused Ailanthus, has, I believe, not mentioned as yet the fact observed by several naturalists, that the rosebug is stupefied, sickened and probably destroyed by either eating the leaves, or getting within the atmosphere surrounding the male or staminate plant of this species.

Great numbers of this pest of the garden have been seen on several occasions in a crippled or dying condition beneath the tree, one instance being given where the ground was literally covered with them.

This being the case, would it not be politic for those who cultivate the rose either for pleasure or profit, to try the experiment of introducing the male Ailanthus into their grounds as a means of reducing the numbers of this destructive insect.

I would suggest its use as a shrub, and individual specimens of it could be placed wherever they would appear to the best advantage, or they could be set in an uneven row as a background to the protected plant.

Like Genl. Noble, I am an admirer of both the staminate and pistillate Ailanthus, and think that the former is one of the best adapted of all trees for shading our city streets, owing to its very open habit.

BROWALLIA ROEZLI.

BY EDWIN LONSDALE, GERMANTOWN, PHIL'A.

This plant was noticed in the MONTHLY some time last year, and recommended for the decoration of our gardens in Summer, and the seed catalogues for the present year are also recom-

mending it for the same purpose; but owing to the attacks of a black, flea-like insect—the same which preys upon Sweet Alyssum and some other plants—with me, last year, it was not a success. In the Autumn a plant was lifted and potted, and placed in a light and warm greenhouse, where it is now, and has been for some time past, a mass of bloom, and from present appearances it is likely to remain so for some time to come.

It is an improvement on the older species—*B. elata*—the flowers are larger, and the plant in habit is more graceful and free-flowering, which will make it a favorite for the decoration of the greenhouse and conservatory, and for cut flowers for the florist. The seed under my treatment did not germinate well; only two plants were raised from as many packets of seed.

So far the plant has failed to perfect any seed, but it may readily be increased by taking cuttings of the young shoots, and inserting them in sand in a warm place, in the ordinary way.

The color of the flower is pure white, with a yellow center, very delicately shaded with azure blue, reminding one of the pretty little *Houstonia cerulea* of our meadows, though this is not so noticeable in the flowers on the plants under glass in Winter, as it was when growing outside in Summer.

EDITORIAL NOTES.

THE ORIENTAL SPRUCE.—Mr. Samuel Parsons says—and we quite agree with him, only more in its favor—that it is unlike the Norway, even when young, in its silvery bark and dark black green foliage. It is unique among evergreens in this peculiar dark shade:

“The Oriental spruce is the very best of all spruces, if people did but know it. Unfortunately, while young it resembles the Norway, lacking somewhat of that spruce’s early vigor. As age increases it develops more rapidly, and finally, in no great time, towers into a solid mass of dark, lustrous foliage, possessing a very peculiar beauty and marked character on the lawn. It is, moreover, extremely enduring and hardy.”

THE TREES OF WASHINGTON.—In reference to the remark we made last month in regard to the low cost and excellent variety of the shade trees of Washington, we find the following in a Washington paper before us:

“Of the cost of the planting and care of trees in this city, we may safely challenge comparison

with any similar work of its kind that has ever been undertaken. This statement is made from a somewhat extended knowledge of the cost of tree-planting in cities, both in this and other countries, and the claim is fully warranted by facts. This arises from the circumstance that everything has been done in accordance with a well-considered scheme, which was formed previous to commencing operations, in which every possible contingency that could be foreseen was provided for, based upon a lengthened and diversified experience in this and kindred matters relating to rural improvements. This scheme and the practical execution of its varied details has been projected and carried out under the direction of a Park Commission, which was organized by the late Board of Public Works, in the latter part of the year 1871. This commission is composed of three of our citizens, who have given much personal attention to the work, and with as little interference as possible to their daily professional duties. To them it is a labor of love for the public good, and their only reward is the inward gratification that results from the execution of good deeds.”

OAK HILL CEMETERY, UPPER SANDUSKY, OHIO.—The *Wyandot Times* reports this as a highly successful undertaking. It embraces thirty acres of land, and has three miles of avenues. Mr. W. T. Harding, who designed and laid out the grounds, and which he still superintends, receives great praise for much of the success which has attended the work.

PUBLIC PARKS IN ENGLAND.—Notwithstanding the prevalence of beautiful gardens everywhere, the English are still multiplying their public grounds. Leeds has just purchased 300 acres, four miles from the city, as a park for the people.

STANDARD EUNONYMUS.—It is said that the *Eunonymus radicans* grafts readily on *E. Europæus*, and makes very pretty lawn plants when so treated.

NEW OR RARE PLANTS.

PENTSTEMON COBCEA.—This is one of the finest hardy species of *Pentstemon*, and is yet very rare in cultivation. The flowers are among the largest of the genus and are produced in loose spikes of 8 to 12 inches in length, broadly bell-shaped and two inches or more long, of a

purplish white, and remain for some days. The plant is hardy and vigorous, and improves with careful cultivation. It cannot fail to become one of the finest of the many hardy herbaceous perennials just now becoming so popular in Europe and America.—*J. M. Thorburn.*

ERYNGIUM LEAVENWORTHII.—The showiest of annuals, with stem from one to three feet high, and very branching. The heads are of a beautiful purple. Branches cut after the flowers and leaves have matured will last two or three months, making it a valuable addition for Winter bouquets. One of the most valuable plants introduced in many years.—*J. M. Thorburn.*

SPIRÆA PALMATA ELEGANS.—**NEW HYBRID SPIRÆA.**—Under the name of *Spiræa palmata elegans* M. Ed. Pynaert figures and describes in the current number of the *Revue de l'Horticulture Belge* a plant, as it would seem, of great interest and beauty. The interest resides in the circumstance that the plant is stated to be a cross between *Astilbe barbata* and *Spiræa palmata*, while the inflorescence is intermediate between the two parents. The flowers are very numerous, their pink stamens contrasting well with their clear white petals. Whatever its origin, the plant will probably prove hardy, and will be very useful for forcing and for house decoration.—*Gar. Chronicle.*

DAPHNE FORTUNEI.—This was sent to the Royal Horticultural Society by Mr. Fortune, from the Chusan Hills, Ningpo, and Shanghai. It is a small downy-branched bush, with thin deciduous opposite and alternate ovate-oblong leaves, covered with very soft fine hairs. The flowers, which generally appear very early in Spring, are bluish-lilac, arranged in clusters of four, upon branches scarcely beginning to put forth their leaves. They are rather more than an inch long, covered externally with soft, closely pressed hairs, and divided in the border into four roundish, oblong, obtuse, uneven lobes, of which the two inner ones are the smallest. In the inside of the tubes of the calyx are eight nearly sessile stamens in two rows, with narrow sharp-pointed anthers. The ovary, is smooth, stalked, one-celled, with a small fleshy scale at its base, and a single suspended ovule; it produces abruptly from its summit a very short cylindrical style, ended by a capitate hairy stigma. No species yet described approaches very nearly to this, which has been named after its enterprising discoverer; the seed being unknown, it can only be conjectured that it belongs to the *Mezereum* divisions of the genus. It is a greenhouse or,

perhaps, half-hardy shrub, and is a charming addition to this class of plants, more especially since it appears to be well adapted for forcing.—*Garden.*

SCRAPS AND QUERIES.

STOCKS FOR GRAFTING.—G. B. G., Manchester, York Co., Pa., writes: "Will you be kind enough to answer the following queries through the March number of *THE MONTHLY*: How and when are the following trees grafted, and what kind of stocks are used for the different varieties? Is the operation performed in the same manner as for fruit trees? Such as the finer varieties of Japanese Maples, Weeping Beech, Elm, Ash, Willow, &c.; also the new Japanese Persimmon. Your answer to the above will much oblige."

[The Japan Maples are grafted on *Acer striatum*, the Moose or striped bark maple; Weeping Beech on either the European or the American species; the Elm on any species; they intergraft one with another. So also with the Ash, but the European makes the best stock. The Goat Willow is the best stock for Willows; and the common Persimmon does well for the Japanese varieties. They "take" by either cleft or whip grafting, just as fruit trees do.—*Ed. G. M.*]

WORM ON THE JUNIPER.—A Babylon, N. Y., correspondent says: "Please ask, through the *GARDENER'S MONTHLY*, of nurserymen, if they know anything of this worm that is destroying my Junipers. It is a quarter of an inch long, and forms a web covering through the winter. I have not observed it in summer. It evidently feeds on the young leaves, while in its active state; the ends of limbs become knotted, and show such an appearance as fire would produce."

IS ASPIDISTRA LURIDA HARDY?—I. C. W., Fishkill, N. Y., writes: "Mr. John Pettie, a gardener of the first water, told me a few weeks since that the *Aspidistra lurida variegata* was a hardy plant, and should be used in the herbaceous border. He states that he has tried it at the Kelly Gardens, at Rhinebeck, N. Y., and that it proved hardy then; and also states it has stood out in England, and went through the winter finely. We have always grown this as a stove or warm greenhouse plant, and supposed it was tender. Do you know of another instance of its standing the winter in the herbaceous border in this country. If it has not been published, would it not be well to state the fact through your journal."

GREEN HOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

ORCHIDS WITH OTHER PLANTS.

BY C. H. S., BALTIMORE, MD.

Having had considerable success in growing orchids in a mixed collection of plants, I think that other amateurs would be glad to do so did they only know how easily it may be done, and in my estimation, how much better they appear when grown with *Feris*, *Begonias*, etc., than when grown in a house entirely devoted to them. I have never seen a collection of orchids except one in which the plants were grown for commercial purposes; and any success that I have had has been from the study of these wonderful plants in their native habitats. I remember as well as if it was only a week ago, the first orchid that I ever saw. It was on Christmas day, 1839, almost forty years ago. I was a sailor boy at Rio de Janeiro, and having a holiday to go on shore on Christmas, I had climbed up the mountain back of the city. Tired and hungry I sat down to rest, when I observed quite a large white flower not far from me. On examining it I discovered that a limb of a tree had been broken off by the wind, and that the bloom belonged to a plant growing on it, but entirely distinct. I think now that the flower was *Cattleya crispa*, or some one of the white *Laelias* from Rio.

Some six or eight years ago, circumstances allowed me to indulge in the luxury of a greenhouse. I immediately commenced to collect a few orchids, and my collection of these plants has gradually increased until I have some of nearly each species. They have been grown in two small houses, each 12×32, heated by flue and hot water, the heat so regulated that when one house stood at 65° the other would be 50° or less. These houses have been torn down, and a house 55×17 substituted. In these houses were grown all manner of winter-blooming stuff, *Begonias*, *Bouvardias*, *Epiphyllum*, *Tydea* and other gesneraceous plants, *Geraniums*, &c. My *Azalias*, *Camellias*, and many other plants that can stand as low a temperature as 35° at times and still seem to bloom better for it, are grown in another house.

I have bloomed among other orchids, in the last year, *Dendrobium nobile*, *D. heterocarpum*, *D. monilliforme*, *D. moschatum*, *D. fimbriatum*,

Oculatum and several other *Dendrobies*; *Ansellia Africana*, *Ærides odoratum* and *A. virens*, *Vanda teres*, *Cattleya Mossæ*, *C. labiata*, *C. Forbesii*, a plant with seventy-five flowers open at one time; *C. citrina*, *C. guttata*, *C. Loddigesii*, *C. chocoensis*, *C. Trianae*, *C. superba*, and a half-dozen other varieties; *Odontoglossum*, about ten varieties, with *Tricopillas*, *Miltonia*, *Epidendrum*, *Stanhopiaes*, *Laelias*, *Calanthes*, *Lycaste*, &c. As I have never seen a collection of orchids I do not know how they compare with others, but friends who have seen them tell me they are well-grown and healthy; and as they bloom well, I suppose they are handled about right. With these remarks I propose to give a few notes on my manner of growing orchids. In the first place, any one wishing to grow orchids with a mixed collection, must divest himself of the idea that the house must be saturated with moisture. Such a condition would be injurious to the beauty of many foliage plants, and would cause the blooms of many other plants to mildew. I grow very few on naked blocks after they are once established, but either in well-drained pots, buckets made of cedar, (*Juniperus Virginianus*) or on blocks well covered with moss. I use sphagnum moss alone, for all but the terrestrial orchids; and I water my orchids, as I do other plants, at the roots when they need it, and use the syringe no more than I would for *Begonias* and gesneraceous plants. It is impossible in a short article to give any idea of the treatment of the different species, time of bloom, manner and time of growth, etc. My experience is that the idea that nearly all orchids should be at rest from Nov. to March, is not according to their wants. I find that very many Brazilian orchids, blooming from Aug. to Nov., start into growth in the fall, which is the spring and wet season of Brazil, and at this moment many of my Brazilian orchids are growing finely. But they need no more heat than is requisite for *Bouvardias* and *Heliotropes* to keep them growing and making good bulbs. I propose later to give you a few articles on the different species that I have grown, and will then try and make clearer my views given from my experience. I would here also remark that an almost universal error in growing orchids is keeping them too wet, too hot, and too densely shaded. I do not remember seeing many orchids

growing, either in dense shade or thick woods, but mostly on the trees overhanging streams or on the edge of forests.

DISEASE OF THE MARECHAL NIEL.

BY W. W., DOBB'S FERRY, N. Y.

Having read with interest the remarks of your correspondents on the above subject with some diffidence, in regard to rushing into print and difficulties, &c., I am induced to send you my experience in the hope that the disease may be well defined, and some one prescribe a remedy. Two years ago I had a very fine plant on a Manetti stock, which showed all the symptoms described by your correspondents. The stock outgrew the rose three to one, forming an excrescence at the point of union, and the gradual decay of the plant was the result. I had at the same time plants worked on LaMarque and Solfaterre, which were in excellent health, and are yet, being entirely free from any appearance of disease. I have noticed the same disease, or the same cause, produce the same effect in other grafted trees where the stock has not been suitable from some cause to the growth of the scion. I have also noticed that a very little neglect in disbudding old plants in the early part of the summer, when they are usually put outside or the sashes taken off, will cause the decay of the leading branches farthest from the base of the plant, the sap preferring to support a lot of younger branches nearer the roots and leaving the old ones to die or starve. It is not my wish to raise any point for controversy, but I would certainly advise anyone who intends growing the Marechal on light, sandy soil, to keep from planting imported Roses. In the hands of our leading flower-growers on strong clay or loamy soils they do well for a few years and are replaced from time to time; but in my opinion, better results could be obtained under any circumstances with plants worked on the strong growing varieties of the Noisette class.

ANTIPODAL HYACINTHS.

BY J. H. KRELAGE, HAARLEM, HOLLAND.

In reply to the inquiry made about this article in THE GARDENER'S MONTHLY of November last (page 329), we can say that we re-introduced this very old Dutch method of cultivation some years ago. We exhibited collections of Antipodean Hyacinths at the horticultural shows at

Haarlem and Utrecht, in 1874, and got large silver medals as first prizes. Again we showed two collections at Haarlem in 1875, and got the first and the second prize. Both the lots exhibited at the last international spring show at Amsterdam (1877) which got the first and second prize, came from our nursery. These lots seem to have attracted very much the attention of the visitors—at least they were spoken of in various horticultural periodicals, and illustrations given of such pairs of Hyacinths cultivated in a double glass, in the *Gardener's Chronicle*, 1877, page 591, and the *Gardener's Magazine*, 1877, page 262. Both these illustrations, however, are not correct as to the form of the leaves. Of these you find an exact figure (No. 47 page 113) in our German catalogue, 303 C. An English edition of this catalogue is in preparation. In the said catalogue you find some details as to the management of this method of culture, which you will find differ evidently of what is said about the matter in the *Gardener's Magazine*, 1877, page 261, and the *Gardener's Chronicle*, 1877, page 632. Till now no other house here seems to have made a specialty of this method of culture. We have always ready a number of double glasses to suit our customers. The form of these presently used is a perfection (at least as concerns a legacy) of the old Dutch forms which we used half a century ago, when the under part had an inverted funnel form, in which there was more and better room for the flower of the so-called antipodean bulb to develop itself. In the new form it sometimes occurs that the flower develops so long, that it is obliged to bend upwards with is top to find room.

This method of cultivation, to be done well, claims much attention, but gives, by the extraordinary effect, no small satisfaction.

We suppose the above particulars will be sufficient to clear up this matter.

TUBEROUS-ROOTED BECONIAS AGAIN.

BY W., NORFOLK, VA.

Your correspondent, on page 2 of January MONTHLY accuses me of over-estimating the value of the above acquisition to our list of plants for our-door culture. As he is from England quite recently, he ought to know better than I of their merits there; but on page 202 of the September number of "*The Garden*," 1877, published at London, I think an unprejudiced reader will find my statement: in part, if not wholly substantiated; and I suppose the au-

thorities there given are equal to Mr. W. Falconer's experience, or the Editor would not give them his unqualified approval by publishing without comment. One writer says: "No one who has not seen these most beautiful and invaluable plants, either bedded out in masses in circular beds slightly raised in the center, or as single specimens, each in the center of a small round bed, can form any adequate idea of what a brilliant and continuous display of color they provide during the whole of the three summer months, from the middle of June to the middle of September. Also, that even when in full bloom they are almost insensible of the heaviest rain, as torrents which would knock every blossom off a bed of *Zonale Pelargoniums* (*Geraniums* are so called in England) do not cause a single bloom to drop before its time, merely making the pliant foot-stalks bend their heads to the storm, raising their lovely blossoms in all their brilliancy and beauty on the reappearance of the sun, when the storm has passed." And much more in the same strain is said by Mr. W. E. Gumbleton, for whom Van Houtte, of Ghent, the foremost and most successful raiser of the best varieties, has seen fit to name one of his two (only) new ones the past season. Could more be said for the famous "General Grant" itself? Another correspondent on the same page begins a short notice, equally laudatory, by saying: "We have no plant the equal of the *Fuchsia* for in-door and out-door decorative purposes, unless it be the new race of *Tuberose-rooted Begonias*," and goes on to describe those of Messrs. Veitch's collection at Chelsea, and closes by saying: "When grown out of doors, one great advantage they possess over most other plants is that no amount of wet appears to have the slightest influence in damaging their flowers, which they go on producing until cut off by frost." In favored localities the tubers will sometimes survive the Winter; and when lifted, they can be made to bloom in the greenhouse till after Christmas, as they have done at Norfolk this season. He further says, "For planting on rock-work, these *Begonias* have few equals."

I call this "practical experience" of the right sort, and it must be borne in mind that it is only since 1874 that they have been grown, even in England, to any great extent.

Now for what they will do here in America, and this I can testify to from personal knowledge. They stood the blaze of a Virginia sun in the open air unprotected by any shade whatever,

both planted out and in pots, all last Summer, till frost cut them down, and were a perfect mass of continuous bloom. The severe storms and showers (and any soldier who has campaigned in Virginia knows what thunder-storms are here, as well as blazing suns) have always left them uninjured, fully corroborating the above quoted testimony.

If your correspondent will visit Norfolk we will convince him with regard to this matter. One thing I ought to add for the information of amateurs who, like myself, will try to raise them from seed and will fail four times out of five, that they require unusual care and attention, the seed being as fine as a mere powder; but when fairly up and transplanted, it is wonderful how rapidly they push forward and begin to throw out their rich and charming blossoms. I may be too hasty, but I predict for this lovely species a success far surpassing any plant of recent introduction for similar purposes.

ANTHURIUM SCHERTZERIANUM.

BY MANSFIELD MILTON, CLEVELAND, O.

This fine plant is a native of Costa Rica, and consequently requires a good warm temperature to insure success in its culture. There are several varieties of this plant in cultivation, some of which, especially the small-leaved ones, are not worth growing; the varieties are the best having large leaves and large flowers or spathes, as it is in the bright color of the spathe where the beauty of the plant is. As I consider a plant which we have here a good variety I shall give the size of the leaves and flowers. The leaves are of a bright green color, about sixteen inches long, the leaf starts about a foot high; above this rise the flower spikes, the spathes being two inches wide and fully three inches long, of the brightest scarlet. The spathe is twisted and also bright scarlet, therefore forming a beautiful and very attractive object. The plant has been in flower since last April, having only now (November) two flowers. A mixture of sphagnum moss, charcoal and pieces of fibrous peat is what I grow it in, with abundance of water in its growing season; plenty of drainage is necessary to allow the water to pass freely off. A cooler temperature and less water when in flower than when growing makes it retain its beauty longer. The insects which attack the foliage of this plant most are the white and brown scale, which can be easily kept under by

occasionally washing the leaves. It is propagated by seeds and divisions. I would advise the people when purchasing a plant of this *Anthurium* to endeavor to get the large leaved variety, for be the culture ever so good, but little satisfaction is derived from the small leaved kinds.

EDITORIAL NOTES.

STEPHANOTIS FLORIBUNDA.—With this species we have enumerated some of the best stove climbers that can be grown, but none are more admired than the *Stephanotis*, and it deserves attention wherever there is room for it. Pot plants are nothing compared with a good climbing specimen, yielding flowers in abundance both large and fine. Good loam and peat in equal quantities, and plenty of sand, make the proper compost for it. A bottom-heat from 75° to 80° is high enough, good drainage is essential, and plenty of water at the root during the growing season, but not much in Winter. The shoots will grow to an enormous length if allowed, and as it breaks freely there is never any difficulty in keeping the wires furnished from top to bottom. To keep the shoots clean and free from mealy bug, its worst enemy, not more than two or three should be trained to one wire, and the wires should be five inches or six inches apart, and within eight inches of the glass. The only way to keep down a mealy bug is by vigorous syringing, so as to never let it obtain a peaceable footing, and attention with the brush to prevent the enemy clustering in about the axils of the leaves. In a stove the flowers continue to be produced for a period of six weeks or two months, but by having a plant in an intermediate-house also the blooming season may be prolonged considerably. None of the species here treated of require shade in summer provided the ventilation be sufficient; but when the stove has to be shaded for the sake of its other inmates, the climbers will suffer no injury if the shading be not too thick nor used oftener than required.—*Field*.

WINTER DECORATIVE PLANTS.—In addition to the many flowering plants grown for decorative purposes at mid-winter, Ferns play an important part, and especially the Maidenhair Fern, *A. cuneatum*, and the elegant *A. gracillimum*. At the Royal Nursery, Ascot, Messrs. Standish & Co. grow these two in immense

quantities, and at Christmas there could be seen two long span-roofed houses quite filled with some thousand plants of *A. cuneatum*, the great majority in 32-pots, with larger examples in pots of an increased size. Every plant was a perfect specimen in itself, so admirably was it grown. The plants are not marketed, but simply grown for the fronds, and they are constantly being sent to London. The ripened, developed fronds are those gathered, as they stand much better and last longer than the young ones. They are gathered and carefully laid in baskets, and reach their destination without taking harm. A *gracillimum* is wonderfully grown at Ascot. There are those who term it a "miffy grower," and say they cannot do anything with it, but at Ascot it is the very perfection of vigor, and if anything, more robust than *A. cuneatum*. It is a very fast grower.

A large number of plants had been raised from seed, and it was curious to note that in a very young state the pinnae were as large as those of *A. cuneatum*; but when it gets into size, the young fronds take on that small elegant form peculiar to it. So rapidly do the plants come on from seedlings, that there were admirable specimens in 48-pots that were in the seed-pans a year ago. Some extra-large specimens showed off the character of the species to the very best advantage. It may be that failures with this Fern arise from the use of too much peat in the soil; at Ascot no peat whatever is used. The soil is a sandy, turfy loam, and a little horse-manure, and strong plants have a little weak manure-water once a week, and rather more in summer-time. The experience gained at Ascot teaches that *A. gracillimum* will not grow in peat. The *cuneatum* is increased by dividing the plants when they break into growth after being cut over for the London season. The plants, as soon as they begin to be active, are cut to pieces, and potted in 32-pots.

Asparagus decumbens is much grown for table decoration at Ascot; its long handsome shoots are very acceptable for clothing the stems of tall epergnes. This species was growing in 48-pots, and a line of plants along the front of a stage of Camellias, etc., hung down like a fringe. The plant puts forth pseudo-bulbs like an Orchid, and is nearly deciduous in Summer, but most ornamental in Winter.—*Gardener's Chronicle*.

A NEW FASHION IN CUT FLOWERS.—A very pretty innovation is to wear the same flowers in the hat or bonnet as are held in the bouquet in

the hand; consequently, only flowers that are in season are worn. Now, of course, we have a great choice, but in Winter we shall have only ivy, heath, and branches of fir-tree, with a few of the flowers reared in hothouses. The flowers on the hat, also, must be perfumed as if they were real flowers. There is a poetry in the fashion, which will not fail to please. Even elderly ladies may follow this fashion: for they will choose flowers adapted to their age, or, if not flowers, they may wear the foliage of the flowers—or, better still, *faded* flowers. And perhaps these are the most beautiful of all. Imagine a large over full-bloomed rose, the half of which still clings to its stem, whilst the other half appears to fall leaf by leaf amongst the foliage. It is extremely lovely and graceful, and is arranged with so much art by the florist that one lady who wore such a rose at the Grand Prix was warned by another lady standing near her “that she was losing her flowers.” I can therefore recommend faded flowers to most ladies. Feathers also are greatly worn, especially on hats—the large-brimmed Rubens hats, which are now so much the fashion—now more than ever, indeed. At the Grand Prix, fancy fair, and review, the ladies wore little else. Hats at the back of the head are now no longer considered *comme il faut*. Duchesses, baronesses, princesses, countesses, etc., all wear large-brimmed hats bending over the face. And how pretty they are! They may perhaps not be quite so saucy as the jaunty sailor’s hat, but if they look less *provoquants*, ladies can, at least, look blushing beneath their shade; and what is moss to a rose so is blush to a woman.—“*Echoes from Paris*,” in *Pictorial World*.

NEW OR RARE PLANTS.

SEMI-DOUBLE GLOXINIAS.—These are by no means rare, but as yet they can scarcely be termed meritorious. I have recently seen a number of them in flower, but cannot help considering them good flowers spoiled. The outer calyx is not continuous but disjointed, a circumstance which gives the flower a ragged appearance: if, however, it can be so far improved upon as to be developed into a perfect outer calyx as is seen in some of the forms of the Canterbury Bell, it may then become very effective. The forms of Gloxinia are well worth the attention of the florist.—*D. in Garden*.

CENTAUREA CLEMENTII.—Among the silvery leaved plants now so popular for carpet bedding there are few tribes more useful than the Centaureas which give us so many good ones. Some years ago we noted the appearance of a beautiful variety in Europe, but it has been slow in



getting into our country. A correspondent tells us he had it out last Summer, and that it stands the sun very well. We give with this an illustration of a leaf.

CUPHEA ROEZLI.—This new and beautiful species, which has been introduced into the market by M. Charles Huber, nurseryman at Nice (Maritime Alps), was discovered in the district of Tepic, in Mexico, by M. Roezl, who sent the seeds to M. Ortgies. The first sowing was made

by M. Charles Huber in August, 1875. The plant forms a soft-wooded, very vigorous shrub, often growing to the height of 3 ft., or even more. The flowers are extremely abundant; they are covered all over with light down, and are slightly gibbous, or slipper-shaped. From its vigor, the abundance of its bloom, and the length of time it keeps in flower, the *Cuphea Roezli* will be much sought after for the ornamentation of cold greenhouses in the climate of Paris, and for gardens in the open air in the south of France. If grown properly, there is no doubt that this plant will soon be common in our markets. Planted in good time in the open air, in a well sheltered and sunny position, the *Cuphea Roezli*, which a very free flowering plant, will begin to bloom in the course of the Summer, and continue to do so without interruption right into the Winter. The plants, however, must be well protected from frost. This species of *Cuphea* may, according to circumstances, be cultivated as a biennial by leaving the plants in the open air, as is already done in the case of several greenhouse plants, such as *Pelargoniums*, or it may be looked on as a greenhouse plant proper, and re-potted and pruned in the spring according to the purposes for which we intend it.—*Garden*.

NEW GERANIUMS.—New varieties are out in force. Besides those offered by W. K. Harris in our last month's advertisements, there are two in the West of some promise. Fanny, a bronze zonale, flower salmon color, and Ralph, with crimson flowers.

SCRAPS AND QUERIES.

HYACINTH BLOOMING.—R., New York City, asks: "What has been on an average the result of Hyacinth forcing this year; do they all remain behind the general run, or is it more so in those regions of our country where the winter has been wet and the skies overcast? I have taken a short trip over the West last month, and found the Dutch Hyacinths very backward. Around here I have hardly yet seen what to call a *fine* blooming specimen. The same report I read in the last number of the *London Gardener's Chronicle*. I can only ascribe it to the blight which damaged the foliage of the Dutch Hyacinth last May, before the bulb had time to fully develop and mature. The Dutchmen themselves did not seem to know what to make of it, when I saw them last June, as they

said the oldest growers did not recollect such an event. They certainly appeared very much cast down about their prospects to raise a large crop for this season; and so far I hear it corroborated, that fewer Hyacinth bulbs have been planted in Holland last fall, for the season of 1878, than has been done in other years. Other bulbs I saw, were doing well on an average."

[No flowers have bloomed as well generally this winter as usual, perhaps owing to the absence of snow. The more light the more flowers; the more snow generally the more light. We merely offer this as a guess.—ED. G. M.]

FLOWERS IN MILWAUKEE.—T. G. A., Milwaukee, Wis., writes: "Camellias, Azaleas and Oranges; this class of plants do not appear to do well here. Florists and others get them in a very good condition from the East, but a few years generally uses them up. I have got some from Mr. Buist, and others have some from Mr. Dick and other florists, all of which came in tolerable good condition, but they are now in three years nearly worthless. In fact, I have seen none in Wisconsin in a good, healthy condition. The same may be said of the *Rhododendron*. Is the cause attributable to atmosphere, or soil? I believe it would be of great service to many gardeners here, to get some light on the matter through the *GARDENER'S MONTHLY*."

[Years gone by, the Editor has seen excellent Camellias at Milwaukee. No doubt it is but some temporary and local cause that those you refer to do not do well. It is probably no permanent cause.—ED. G. M.]

BUTTERFLY FLOWERS.—While our correspondents are teaching us how to grow Butterfly Orchids, Mr. Rolker, of New York, sends us samples of paper butterflies, looking so much like real living things, that even one "in the flesh" might take them for brother "flies." They are used to give life to bouquets and floral work, and must have the full effect desired.

DOUBLE WHITE OLEANDER.—Mrs. W., Worcester, Mass., kindly writes: "In your number for September, I noticed 'E.' inquires under scraps and queries, page 268, if there is really a double white Oleander. In reply, I will say, I have a double white Oleander which bloomed fully for the second time, last summer; it was a slip three years since. There are now five stalks, from one to two and a half feet deep, each with a branch of buds. A friend from whom this slip came, has a plant equally vigorous."

ASPECT OF A GREENHOUSE.—S. B. B., Warrenton, W. Va., writes: "I am about to build a greenhouse, and ask that you would favor me with your advice as to position. The place I would like to put it is so fixed that I would be compelled to have the gable end (which would be of glass) facing a little south of east; the sun shines on the spot

all day. I have another place I could put it in where the gable would face a little west of south, with sun all day."

[Supposing the chief object will be flowers in winter, either aspect would do very well. The one giving as much direct sunlight from the southeast having the preference.—ED. G. M.]

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

Grape-vines in the open air, on arbors and trellises, should have their pruning finished before warm Spring days set in, or they will bleed. It does not injure them much, but it looks bad. The pruning must be regulated by the condition of the vine. If the vines are young and the shoots weak, cut them all back, to make a new and vigorous growth. If already a fair quantity of strong shoots of last season's growth exists, cut out the weaker ones, so as to leave enough of stronger ones. The cane system, slightly modified, is best for arbors and trellises in the hands of amateurs generally. This implies a new set of canes every year or two. If, as frequently happens from bad management, all the young and strong-bearing wood exists only at the end of the vines,—and these latter have become nothing but long, rosy-looking apologies for what a vine should be—the whole cane may be buried down in the soil to where the strong shoots spring from, and the young wood of last season trained up from this. The plant will then recover its good appearance quite as well as by cutting down, with the advantage of not sacrificing a year's crop of fruit.

Many kinds of raspberries, especially in dry soils, have a tendency to throw up innumerable suckers. These should be thinned out. Three or four canes are enough to leave in a "hill." We like, however, to grow raspberries in rows, where each cane may have a chance to enjoy an independent existence of about a square foot of soil for itself.

We have before remarked that fruit trees and bushes should invariably be cut in severely, and not allowed to bear the same season of planting. It is a fatal mistake to look for fruit the same season of setting out the trees. This is at the expense of future growth, and without future growth there will be no future crops.

Raspberries, blackberries, &c., frequently bear and die when so treated. The canes should be cut back to a few inches on transplanting. Raspberries for fruit in fall should always be pretty well cut back. It is not essential with the regular Fall-bearing kinds, but it aids them much.

In the vegetable garden we might give a hint in asparagus culture, that if very large stalks are desired the soil must be very rich, and the plants set as wide apart as rows of corn. It is to be observed that those who believe there are some varieties of asparagus that may be reproduced from seed, urge the necessity of planting very wide apart. We do not know that *very* large stalks are especially desirable, and for ordinary use would set the plants about twenty inches apart; about four inches beneath the surface is deep enough to set. Good deep soil is *generally* good; but if in a stiff soil, deepening it for asparagus, only makes a *well* into which the surrounding waters drain. It is much better in such situations to plant in raised beds. The alleys between, then serve as surface ditches. Many failures in planting asparagus, arise from this depth of bed, under such circumstances. The plants rot from water about them.

In the open ground Peas and Potatoes receive the first attention. Then Beets and Carrots. Then Lettuce, Radish, Spinach, Onions, Leeks and Parsley. Beyond this, unless in more favorable latitudes than Pennsylvania, little can be done till the first week in April. There is nothing gained in working soil until it has become warm and dry.

Those who have no Spinach sown in the Fall should do that right away; no amount of stable manure but will be a benefit to it, though guano, in even smallish doses, will kill it. Guano produces excellent Cabbage, mixed with the ground while it is being dug for that crop. Cabbage is ready; and Potatoes are better in

before the beginning of next month, if the ground is not too wet; many plant Cabbage between the Potato rows.

Onions are better put in early, but the ground ought to be dry, and trodden or beaten firm when the sets are planted; the ground ought not to have rank manure—wood ashes and pure undunged loam will alone produce an excellent crop.

To have Turnips good in Spring they must be sown very early; they are hardy, and must be put in as soon as the ground can be caught right.

Parsley delights in a rich gravelly loam, and should be sown very early.

Parsnips, another crop which should receive early attention, also delights in a deep gravelly soil, but detests rank manure.

Lettuce and Radishes continue to sow at intervals.

Herbs of all kinds are best attended to at this season—a good collection is a good thing.

The Carrot will thrive in soil similar to the Beet; lime is an excellent manure for it—we use Long Orange. Celery may be sown about the end of the month, in a bed of very light rich soil, and Tomatoes, Egg Plants and Peppers sown in pots or boxes, and forwarded. It is as bad to be too early with these as too late, as they become stunted.

In vegetable garden culture it must be remembered that we have to operate the reverse of fruit culture. A woody growth is what we require for fruit trees; but we need for vegetables a soft, spongy, succulent character, the very reverse of this. For this end the ground cannot be too deep, too rich, or too much cultivated. The hoe and the rake should be kept continually going, loosening the surface and admitting "air and light," as the old books used to say. There is not only an advantage in this for the direct benefit of the plant, but an early use of these tools keeps down the weeds, and thus we save labor. It is a great thing to be "forehanded" in the weed war.

COMMUNICATIONS.

FRUIT NOTES FROM CALIFORNIA.

BY JAMES SHINN, NILES, CAL.

I shall at present confine my observations to that portion of the State with which I am most familiar—the counties of Alameda and Santa Clara, embracing the great valley which extends

from San Pueblo on the north to Gilroy on the south. This district, embracing over one thousand square miles, is one of the most important fruit sections of the State. All the fruits of the temperate climes are grown in perfection, and many of the so-called semi-tropical.

The climate is varied and much modified by the ocean winds, which are chiefly felt in the northern portion, lying near the bay of San Francisco. The southern portion is warmer and drier, hence produces earlier fruit. It may be safely said that the whole district under cultivation produces in great perfection apples, pears, peaches, plums, cherries, the leading nuts, etc.

Very large quantities of the small fruits are grown. The vicinity of the San Lorenzo Creek has proved the best soil for currants, the Cherry being the leading variety, as the Red Dutch does not succeed. San José, Santa Clara and vicinity supply most of the strawberries used in San Francisco and the interior towns. The British Queen, an old favorite, has been discarded, and now Peabody's Seedling takes the lead. The new Monarch of the West is coming into favor. Blackberries, raspberries and gooseberries grow well everywhere. The foreign varieties of grape do extremely well in the foothills of this entire region, and over much of the valley, but are disposed to mildew near the bay. This can be prevented by using a trellis to keep the vines off the ground. The favorite kinds are Black Hamburg, Malvaise, Rose de Peru, Flame Tokay, Muscat of Alexandria, Chasselas, &c.

Figs, pomegranates, olives, lemons, limes and oranges have been grown, of excellent quality, and it is not unreasonable to expect large orchards of these at no very distant day. In some sheltered places we have even fruited the banana; but this is a rare event.

The apple is extensively grown in this entire section, and in great variety. The size attained by many varieties is larger, perhaps, than in any other part of the State; but apples grown with us are somewhat lacking in that sprightly acid which characterizes the same varieties when grown in more mountainous regions. They are also lacking in keeping qualities. With few exceptions, the Winter apples of the East ripen in the Fall or early Winter. The following apples have succeeded best with us: Early Harvest, Red Astracan, Summer Queen, American Summer Pearmain, Gravenstein, Fall Pippin, Holland Pippin, Washington Strawberry, Maiden Blush, Smith Cider, Yellow Belleflower, Rhode-

Island Greening, Cayuga Redstreak, or Twenty Ounce; Jonathan, Vandevere, Wagener, Canada Reinette, White Winter Pearmain, Nickajack, Ben Davis, Skinner's Seedling, Large Striped Pearmain, Yellow Newtown Pippin. The last is our best keeper, and most reliable market apple.

Pears have been grown for nearly a century at the old Spanish Missions, and both soil and climate have proved congenial in the highest degree. Large quantities are grown for the home markets and also for export. Almost all the varieties known have been experimented with; but the tendency among large growers is now to plant only a few kinds, selecting those best adapted to transportation to a distant market. The following have been most profitable: Bartlett, Clapp's Favorite, Flemish Beauty, Seckel, Beurre d'Anjou, Beurre Clarigean, Easter Beurre, Winter Nelis. Only second in importance are the Virgalieu, Madeleine, Bloodgood, Beurre Hardy, Vicar of Winkfield, Duchess d'Angouleme and Glout Moreau.

The peach is grown largely in all this district south of San Leandro. This delicious fruit does not ripen so early in this region as in the warmer interior valleys; hence the attention of orchardists is directed mainly to the medium and the late peaches, in which we excel. For the local demand, however, all varieties are grown. Our most popular kinds are: Alexander's Early, Briggs' May, Tillotson, Strawberry, Large Early York, Shinn's Rareripe, Crawford's Early, Crawford's Late, Orange Free, Morris White, President, Salway and Smock's Late. The Thurbek, Susquehanna, Foster, Silver Medal, Nanticoke and many others are yet on trial. Early Beatrice is not a success.

The Cherry, also, does admirably with us if it is trained low so that the branches protect the trunk. The leading varieties are: Knight's Early, Early Purple Guigne, Elton, Black Tartarian, Gov. Wood, Napoleon Bigarreau, Mayduke, English Morello. The cherry is preferred on Mazzard stock, but bears well on the Mahaleb.

The Plum, Prune and Apricot are staple crops, entirely free from insect ravages, and peculiarly adapted to our soil and climate. They market well while fresh, and are dried with ease. Our best plums are the Washington, Columbia, Peach Plum, Quackenboss, Duane's Purple, Coe's Golden Drop and Imperatrice. Of prunes, the Early Felenberg, German, Hungarian and Petite

Prune d'Agen. The most popular apricots are the Early Golden, Royal, Moorpark and Hemkirke.

The almond and English walnut are grown in every part of the valley, with promise of entire success. Many orchards of almonds have been planted, and some have paid largely. The almond does best in a place somewhat sheltered from the north wind. A line of Eucalyptus globulus is usually sufficient protection.

There are few difficulties in the way of the fruit-grower of this section. No destructive insects have troubled us, and we are near the leading markets of the State. In dry seasons, the increased price of fruit compensates for the short crop. But in some respects the home market is overdone, and we must make an outlet by exporting more fruit, either fresh, canned or dried. Much interest has been shown in various methods of drying, but the present tendency is towards cheap family driers, which will utilize the waste in small orchards, and enable each orchardist to prepare his own fruit.

The region whose leading varieties of fruit I have briefly described, constitutes one of the most desirable portions of California for the orchardist. The business of raising fruit is rapidly extending, and many farmers are abandoning the growth of cereals and planting orchards and are beautifying their places. The awakening of public interest on this topic has been wonderful, and it is hardly too much to say that probably in a very few years this entire valley will be occupied by orchards, vineyards, small fruits and market gardens.

THE DIOSPYROS KAKI OR JAPANESE PERSIMMON.

BY REV. H. LOOMIS.

This fruit is found in Japan and China in the same varieties of soil and climate as the wild persimmon of our own country. It will probably succeed as far North as Lat. 42°, and from that to the Gulf.

Like other fruits, it differs widely in size, flavor and value, according to the soil, climate and culture. It is stated that there are a hundred varieties, of which but few are of value for general cultivation. Some are the size of a musket ball, and others have exceeded a pound in weight. Some also ripen on the tree like the apple, while others (and some of the choicest kinds) are subjected to a process of ripening to remove the astringency and develop the peculiar, rich and luscious flavor.

An exact description of all the varieties is yet to be prepared. Owing to the diversity of names and variations in the fruit, it is difficult to obtain a complete and reliable account of the various kinds.

From careful observation and comparison of authorities I have selected the following as desirable varieties for introduction here, and I give as far as possible a condensed account of each.

Nihon is usually slightly oblong, is round in shape, color yellowish red, with black spots in

Royal, similar in shape to the Taikoon, but more yellow in color, large size. Is said to be good for drying.

Mikado, shaped like a tomato, medium size, bright yellow color. Called in Japan "Tarngaki" (from tarn a tub), as it is usually plucked and packed in casks to ripen. A very common and popular fruit in Yedo and vicinity. Not much used for drying. Some of the specimens are seedless, and especially when the trees are young.



DIOSPYROS KAKI.

the surface and also in the flesh. It is not large, but very productive and early. The flesh is solid and it keeps well, ripening on the tree in September. It is much esteemed for its peculiarly sweet flavor. Grown about Tokio.

Daimio, oblong with rounded apex, color red with black or dark stripes about the eye, medium size, flesh soft, ripens in October. Called "Yedo's best Persimmon."

|| Taikoon, round, of a pale or greenish yellow color, medium size, ripens on the tree in October. A great favorite in Western Japan.

Imperial or Yamato, this is shaped like an acorn or minnie ball. It is very large, reddish color, with sometimes dark stripes on the surface. The flesh is soft when ripe and particularly sweet and fine. When peeled and dried it resembles figs, being covered with sugar that exudes from the fruit. It will ripen on the tree, but is usually ripened in casks. Season, later part of October to January. The most popular variety among the Japanese. From Mino in Central Japan.

Gogen, like the Imperial except in size, but it

is said that the trees are more prolific. Ripens on the tree. Is used for drying.

Kanosan, color yellowish red, oblong, good size, ripens off the tree. The apex is bent to one side.

There is a variety called the "Mame Gaki" (or bean persimmon from its size), that is not good for eating, but the juice of which is used for making paint. The wood is very beautiful, being mottled and black like ebony. It is prized very highly for cabinet ware. The wood of other varieties is not generally of as fine a quality.

There is a small seedless persimmon found in Southern Japan that is used chiefly for drying. It is probable that the trees sold in this country as "seedless" are either the same or else a mistake. No large and seedless variety, as has been represented, is to be obtained.

LIME FOR APPLE ORCHARDS.

BY M. J. BLACKWELL, TITUSVILLE, N. J.

We have used lime on our apple orchard for a number of years, and consider it beneficial in moderate quantities, say twenty bushels to the acre. We have an old orchard that has borne heavy crops for several years, that we have limed with good results.

EDITORIAL NOTES.

NEW ENGLISH GOOSEBERRIES.—There are several new gooseberries being put on the market just now, "remarkably large, free from mildew," &c. We are glad to see experiments made in this direction, for it is not at all impossible that varieties of the English gooseberries may be produced that will be more successful in our climate than the English gooseberries of the past. It is well, however, to remember that these gooseberries belong to the English race, though they may have been raised from seed in this country; and the fact that they have remained a few years free from mildew in any one locality is no proof of their general adaptation to our climate.

NEGLECTING ORCHARD TREES.—The *Country Gentleman* tells of two neighboring orchards at South Haven, Michigan, one is "cultivated," and the owner raises fine fruit. The other allows his trees "to stand" in grass, and the trees are "mossy," "eaten by borers," have "yellow leaves," and "no fruit of any value." The only matter of surprise is that our cotemporary

should go to Michigan for its example, when New York State can show as many such cases as Michigan. We do not believe Michigan one whit behind New York or any other State in its illustrations of neglected orchards; on the contrary, as the writer of this has seen with his own eyes, the fruit growers of Michigan are, as a whole, among the most wide-awake in the Union. We can assure our cotemporary that a neglected orchard has no more chance in New York than any other State. Only good culture can raise apples or any other fruit anywhere.

GRAFTING ROOTED EYES.—Mr. G. W. Campbell, of Delaware, Ohio, takes rooted eyes of grapes for grafting. He says the process is much more certain in this way. The benefits are a very rapid growth from the union on a strong rooted stock.

CARTER'S BLUE APPLE.—Mr. G. W. Stoner, of Louisiana, says this Southern apple is much in the way of Ben Davis, but prettier, fine flavored, and keeps as long as Rome Beauty.

APPLES FOR MISSOURI.—A correspondent, evidently of great experience, from Caldwell county, tells the *Rural World*: "If I were to plant out a new orchard of 100 trees, I would make it about as follows: 50 Ben Davis, 10 Lawver, 10 Winesap, 10 Jeneton, 3 Red June, 3 Early Harvest, 5 Maiden Blush, 3 Smith's Cider, 3 Bellflower, 3 Tallman Sweet. For an orchard of 200 trees I would add 75 Ben Davis, 10 Rome Beauty, 10 Lawver, and 5 Red Astrachan to the above list. For an orchard of 1,000 trees, I would begin with 750 Ben Davis, and the balance Lawvers, Jenetons, Winesaps, etc."

EAST INDIA MILLET.—Under the name of *Penicillaria spicata*, Mr. W. H. Carson, of New York, is introducing a new forage plant. It grows to eight or ten feet high before fall, the stems rarely reaching an inch in diameter, and very leafy. Two quarts of seed, drilled, is enough for an acre. All farm stock like it.

THE NORTHERN SPY APPLE.—The *Gardener's Chronicle* figures the Northern Spy Apple, and says it is one of the best apples in England. It was first introduced to public notice by Ellwanger & Barry, of New York.

BLIGHT-PROOF STOCKS.—In Australia they call the *Aphis lanigera* "American blight." They are using an old English apple, the Ma-jetin, for stocks, which they say is "blight-proof."

NEW OR RARE FRUITS, VEGETABLES, ETC.

TEOSINTE REANA LUXURIANS. Messrs. Vil morin, of Paris, gives the following account of a new grass, which may be worth looking after by our Southern agriculturists: "Much has been spoken lately in the agricultural and horticultural papers of this gigantic graminæa, both as an ornamental as well as a forage plant. It is a native of Central America; perennial in hot climates, it will not stand our Winters; resembles Indian Corn in aspect and vegetation, but produces a great number of shoots, growing 3 to 4 yards high, thickly covered with leaves, and yielding such an abundance of forage, that one plant is estimated to be sufficient to feed a pair of cattle for twenty-four hours. In our northern countries it is doubtful whether it will be available for forage, but it will certainly find its place in large gardens as a decorative plant, for sown in Spring in pots and planted in May in the open ground, it will produce a mass of shoots forming a large bunch of more than a yard in diameter by three yards in height."

SCRAPS AND QUERIES.

CUTTINGS IN ARKANSAS.—Mrs. S. S. T., Alexander, Ark., writes: "Here in Arkansas almost every thing of the tree and shrub kind grows from cuttings put into the ground in February; but the inhabitants do not generally avail themselves of the fact, and indeed many are not aware of it. I know of whole orchards of apples, pears, peaches, plums, &c., now in bearing which were started from cuttings a foot or eighteen inches long. We removed here a year since, and have found Arkansas a country of such wonderful capabilities as to constantly stimulate us to improve its peculiar advantages."

FALL BLOOMING OF APPLE TREES.—J. P. asks: "I would like to be informed, if possible, of the reason of and cure for two Maiden Blush apple trees belonging to a friend of mine, blooming for several years past in October and not in Spring. Situated at Red Bank, N. J., light, sandy soil, about seven miles from sea shore."

[Trees which usually bloom in Spring or Summer, bloom only in Autumn when the leaves have been destroyed or injured before the proper time for the fall of the leaf in Autumn.

Sometimes it is by leaf-blight, sometimes by caterpillars, but in some way the leaves of your friend's trees have been injured towards the end of Summer, and in this direction you must look for the cause.—ED. G. M.]

SCRIBNER SPITZENBURG APPLES.—Mr. Bailey writes: "I do not think that there is much difference in time of ripening of the Esopus and Scribner Spitzenburgs. This year we had very warm weather, ripening the fruit earlier than usual on the trees, and followed by very unusually warm weather after packing. All our apples are over-ripe for the season."

FRUIT-CULTURE FOR MARKET.—J. C. W., Hudson River, New York, writes: "Will you please answer the following queries through your journal? We wish to plant 1000 standard and from 1000 to 3000 dwarf pear, to grow fruit for New York market. What sorts would you advise us to plant? We wish also to plant five acres of grapes. Could we do better than plant the Concord, with a view to grafting to leading white or other sorts? Further, what variety of crab-apple would you advise us to plant, with a view to selling the fruit in New York, and Geneva, N. Y.? Nurserymen advise us to plant Hyslop. What work can you recommend as the best on the cultivation and management of the standard and dwarf pear? also on the grape?"

[While visiting the fruit farm of Col. Edward Wilkins, of Maryland, last fall, Mr. W. told the writer that he had had so much profit from an orchard of dwarf pear trees, that he was about to set out—we believe—50,000 more. These were of the Duchess d'Angouleme. Another of our large standard pear-growers finds the Bartlett, for fall, and the Lawrence, for winter, the best standard varieties. For market, however, one has to study what is his market, and what is the demand there. We have known some old people about Germantown make fabulous sums from old Catharine Pear Trees, by merely whipping off the fruits, and selling them immediately, on the market prices of Philadelphia. But this would be useless in a place where they could not be all gathered one day and sold the next. Concord wul be the best variety in most localities not over-favorable for grape-culture; but if you are on light, dry ground, as on the Hudson you probably are, the Salem, Brighton, Delaware, or others of the better class, ought to do well. All kinds do better grafted on Concord or Clinton Roots. Hyslop or Transcendent Crabs are very good market fruits, but many prefer

the smaller, old-fashioned kinds. A week or two in watching the market in which you will probably sell, is good practice for one who intends to set out an orchard for profit.

It is unfortunately the case that those who have been the most successful in fruit-growing seldom write books. Some of the best—at least the most taking—of the literature of fruit-growing in this country, has been the product of enthusiastic, well-meaning men, who earnestly believed in all they wrote, but whose orchards (when they had any) afterwards proved disastrous failures. With Barry's Fruit Garden and Thomas' Fruit Culturist in hand, and then some good judgment in adapting their experience to your surroundings and circumstances, you will, however, have as good a start as you will need on your road to successful fruit-culture.—ED. G. M.]

PRUNING THE OLD CANES OF RASPBERRIES.—M., Newark, Ohio, writes: "There is a dispute among our fruit-growers as to the best time to prune out the Raspberry canes that have done bearing. Some say as soon as you have picked the last fruit; others, not till Winter or Spring. What is the practice in the East? and which is the best?"

[Theoretically, if the old branches are cut away, there will be more "air and light," and perhaps "food," for the rest; but in practice no special benefit is found. Indeed, in some respect, injury seems to result. The winter is often very severe on the canes. The wind whistles through and dries out the sap. To some small degree the branches of the old canes help to break the force of the wind, and so far protect the young canes. We think, on the whole, there is nothing gained either way. The practice hereabouts is to cut away after the fall of the leaf or towards Spring.—ED. G. M.]

OUTSIDE GRAPE BORDERS.—R. T. Littleton, N. H., asks: "Would you advise making a grape border outside for forcing, in a cold climate like Franconia, N. H.? I see you do in Pennsylvania, in December number, page 367. I had thought the reverse the best in this cold climate."

[Yes; but cover the border in winter with leaves or some other material. Frost will not injure the roots of a grape vine; but then it does them no good.—ED. G. M.]

LINSEED OIL FOR PEAR TREES.—E. J. B., Philadelphia, writes: "Please to publish the following, in order to save others from the annoyance to which I have been subject, and the destruction of fine orchards. We bought a farm, with fine Apple, Pear and Cherry trees, about twenty years old. They yielded quantities of fruit, but wormy. Seeing in your GARDENER'S MONTHLY, Vol. xix., No. 220, April 1877, page 115, Query, Oil for Fruit Trees, 'The writer of this washed some hundreds of trees with linseed oil a year ago; it destroyed all insects, and the trees were all the season and still are models of health. It is far preferable to anything that we know of.—ED. G. M.'"

"My trees, perfect models of health, are now all dying. The bark has split, and is now covered with a white fungus growth to a height of twenty feet, or as far as the oil went. When touched it falls off, and the wood beneath is dead. It looks as if I should lose thirty or forty well-grown, handsome trees. No money could repay the damage done in the loss of shade and comfort afforded. Thinking it would be impossible to have better authority, I had them carefully washed at the end of March or beginning of last April. Perhaps you may be able to suggest something that will save our orchard and our bitter disappointment in losing all our shade and fruit trees."

[The trees referred to in the extract quoted are still "models of health," though now two summers have elapsed. We feel quite safe in saying that *pure* linseed oil will not only not injure, but be of great advantage. Those who have had losses must have used *adulterated* oils. We would advise them to get some more of the same sort, use a little to kill a branch of another tree, get the balance analyzed, and then sue the seller for damages. Any court would award it on such evidence.—ED. G. M.]

FORESTRY.

COMMUNICATIONS.

QUERCUS PHELLOS AND Q. FALCATA.

BY J. M., PHILADELPHIA.

Some of the Southern species of oaks, among which are the two named above, creep up a con-

siderable way towards a colder clime. In Wood's Botany the location of the *Quercus Phellos*, Willow Oak, is given as from N. J. to Fla., and Western States, and of the *Q. falcata*, Spanish Oak, as from Va. to Fla.

I was pleased one day last fall, to find some

fine specimens of the *Phellos* just outside of Philadelphia county, across the Darby Creek where the bridge takes one across to Delaware county. There are some five or six trees in a small clump of woods, the largest of them perhaps fifty feet high, and growing side by side with the *Quercus palustris*, which abounds in this neighborhood. I have been told of specimens of the *Quercus Phellos* which formerly grew in Gray's woods, some four miles north of these of which I am writing grow.

It would be interesting to know the furthest northern point that this beautiful Oak has been where found growing wild.

In the same vicinity that I name are scattered specimens of the *Quercus falcata*, but this extends further up towards Philadelphia city, and even above it, as a large tree grows in Lansdowne Ravine, quite near Horticultural Hall, Fairmount Park. Specimens can also be found in Mt. Moriah Cemetery and adjacent places. The deeply lobed leaves, so tomentous underneath and so leathery to the touch, make it easily recognized from others.

Country folks hereabouts call the *Quercus cocinia* the Spanish Oak, but our botanical works give this name to the *Quercus falcata*.

THE EUCALYPTUS.

BY S., PHILADELPHIA.

Mr. Elwood Cooper, brought up in Lancaster county, Pa., after making a fortune in the West India trade, went to Santa Barbara, California, and settled down to the cultivation of a large rancho—4,000 Olive trees, 4,000 English Walnuts, 12,500 Almond trees, and 50,000 Eucalyptus trees constitute a portion of the orchards and forest he has set out.

Appreciating the importance of growing large quantities of trees and the especial value of the Eucalyptus, he opened an intercourse with Baron Ferd. Von Muller, Director Botanic Gardens of Melbourne, and received numerous pamphlets of the Baron's writing on Eucalyptus. These he has collected and edited, with matter of his writing, making an important contribution to our works on forest culture. Close with as much of the circular as you choose. He has sent a gift of a copy of his book to the Phila. Library, where it can be seen.

In a letter to a gentleman of this city he says: "All of you can have the Blue Gum in your or-

namental plantations for several months in the summer. Plant the seeds in October in a greenhouse, give the roots a large box, put out in June in warm, dry soil, give water sufficient to keep a lively growth. Thus you can have a plant of great beauty by October, ten to fifteen feet high."

He also sent seed of twenty-one varieties of Eucalyptus, a portion of which have been given to Mr. Miller for propagation, at Horticultural Hall in the Park.

Our friends, in the Southern States especially, should take notice where they can secure the books on the Eucalyptus and the seed.

EDITORIAL NOTES.

YELLOW PINE.—It is well worth while asking, What is the Yellow Pine? to remember that in the Pacific States *Abies grandis* is the Yellow Pine. It is also said that *Thuja gigantea* is called the Oregon Red Cedar. The *Libocedrus decurrens* is the Yellow Cedar of the Pacific coast.

THE SPANISH CHESTNUT.—This, though wild in many parts of Europe, is now supposed to have been originally introduced by the Greeks from Asia. The American species is no doubt truly indigenous to the American continent.

WILLOW BARK.—This is successfully used in Russia for tanning purposes.

THE CINCHONA IN JAMAICA.—In the forestry of this island the Cinchona tree is a leading "staple." It is thought there are 80,000 trees of it. Somebody must use quinine.

RAPIDITY OF TIMBER GROWTH.—We have repeatedly given instances of the rapid growth of timber, as opposed to the popular impression, and are glad to insert the following, which we find in a Western paper. We are particularly glad to republish it, as Mr. Schofield deserves great credit for what he has done to stimulate timber-planting in the West:

"Mr. D. C. Schofield, of Elgin, Ill., from trees planted since he was 50 years old, has produced the timber to build himself a fine house. In this he has taken pride to finish it with elegant

wainscoting, and finishing lumber from some twenty-five varieties of the most valuable hard and soft wood grown by himself. It was not the actual necessity for timber that induced this, for the country about Elgin, on the Fox river, is well wooded and contains ample timber even for firing purposes. Mr. Scofield, many years ago, was thoroughly alive to the necessity of timber growing in the West, and he has shown that a man past middle age may rear noble trees, even of the slow growing sorts, while yet he remains a hale and hearty man."

EUCALYPTUS FIRE-WOOD.—It has been thought that the Eucalyptus would be a great boon to California in the way of fire-wood, but

Dr. Baer has recently addressed the California Academy of Sciences on this subject, and insists that the wood is almost incombustible. He says it is impossible to fire a roof made of blue gum shingles, so that what may be lost in fire-wood may be again in making it a substitute for slate.

WILLOWS FOR RAILROAD TIES.—Mr. Jesse W. Fell, of Bloomington, Ill., has created some consternation in forestry quarters by asserting that the white willow makes durable timber for railroad ties. If this is borne out by good tests it would be an extremely valuable fact—so valuable that it is well worth waiting for the actual figures before making up one's mind that it is no good.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

BARRENNESS IN THE FIG TREE.

H. W. RAVENEL, AIKEN, S. C.

We read in the Bible of "a barren Fig tree;" but of the many hundreds I have seen I know of only one instance, and that in my own orchard. I will record its strange freaks, so that if you or any of your readers have seen a similar case, I may have the benefit of your suggestion as to the cause of barrenness and the remedy. The habit of the Fig under out-door cultivation in our latitude is briefly this:

In the Spring, as the leaves unfold and the new wood forms, there is a fruit-bud in the axil of each leaf, which begins to develop and grow rapidly. This process continues until about mid-Summer or after, so that there is a succession of fruit varying in age, and ripening in their order of growth. Towards Autumn, although the wood and leaves continue to grow vigorously until frost, no fruit-buds develop, but they remain dormant as buds. These dormant buds, on the approach of Spring, begin to swell and grow off rapidly, unless it has been previously killed by an unusually severe Winter, and give us what is known as "first crop," ripening early in June. This generally is not as abundant as the later or main crop, but the fruit is larger. What is known, therefore, as "first crop" is the result of fruit-buds formed the Autumn before, and remaining dormant through the Winter. The second or main crop is from buds of the present growing season.

Now for the case of my barren Fig tree. In the Autumn of 1873, when I took possession of my present residence in Aiken, I found this a well grown tree, some 10 or 12 feet high, with several trunks or branches from 4 to 5 inches in diameter, quite large enough to have been in bearing for several years. It had been somewhat neglected, but I had it well manured and pruned. During the Summer of 1874 the shoots made vigorous growth, but no fruit formed. I tried in various ways to force out the fruit-buds by pinching the terminal growth, and by the use of strong manures, but in vain. In the Spring of 1875, the fruit-buds, which should have been pushed the previous Summer, developed finely, and were fully half-grown when they were killed by a late frost. During the Summer of 1875, although there was a healthy and vigorous growth of wood and leaves, no fruit formed. In the Spring of 1876 the same thing was repeated. At the approach of warm weather, the axil of every last year's leaf pushed out its fruit-bud, and there was promise of an abundant "first crop;" but again a severe Spring frost, coming after an unusually mild Winter, killed not only the fruit, but injured the tree to some extent. Again no fruit was developed in the Summer of 1876.

This is the first example of a barren Fig tree (*i. e.*, barren of Summer fruit) I have met with. The proximate cause seems to be want of excitability, and consequent non-development of the fruit-buds during the growing season. What could have caused the change in the usual habits of the Fig, I am at a loss to conjecture. This

is the Lemon Fig (as I ascertained by one or two fruits which partly escaped the effects of frost), the variety most commonly cultivated in Charleston, but which does not succeed here so well as the Celestial and Brown Turkey. These two last named I have found to be the best for our climate; both hardy, good bearers, and quality of fruit excellent. The main crop of Celestial begins to ripen about 1st of July, and continues for a month. Brown Turkey ripens early in August, and continues into September. They both occasionally, when the Winters are mild, bear a small number of "first crop" fruit.

The Fig being a diœcious plant, we have, of course, only the female in cultivation, and the seeds are immature. The fleshy receptacle swells out and becomes a luscious fruit, but for want of proper fecundation the seeds are defective. Do you know of any male Fig plant in this country? It was said many years ago that there was one in New Orleans. If we could raise new seedlings, there might be good prospects of improving our stock, and introducing more hardy varieties.

NOTES FROM OREGON.

BY FANNIE S. BRIGGS, SALEM, OREGON.

Old residents say that the rains commenced here nearly two months earlier than usual. There were very few fine days in October, fewer still in November, and the steams were higher than had been known for years. December, however, has been very pleasant, especially the last week, which has been clear and frosty. Plowing and wheat-sowing have been going on for two months or more, and are still in progress.

As might be expected in so moist a climate, ferns, mosses and lichens abound. In many places the trees for a foot or two from the ground are covered with flat, leathery lichens, in shape resembling the flat, branching antlers of some kinds of deer. Some of these are green, some brown, laced with silvery grey. I never saw such riches of moss. In low grounds every shady place has its carpet, every stone and stump and fallen tree its covering, every fallen twig or strand is taken possession of, and covered with little green plumes overlapping each other with exquisite grace. Finest of all is a kind that seems partial to the ends of oak logs, which looks like long, graceful, interwoven leaves, fine and soft as velvet. The timber of this region is chiefly fir and oak, and the oaks are completely covered with a fine light-green pendant moss,

which looks at a distance like leaves in early spring, and contrasts agréably with the dark firs.

One of the prettiest things at this season is an evergreen shrub known here as "Oregon Grape," but which has leaves like a Holly, though I have not seen flower or fruit. It has glossy dark-green leaves with sharp spines, and is said to bear black, or dark purple berries. [*Mahonia aquifolia*.—Ed.] The "Oregon currant" must be a beautiful shrub. Usually, flowers, like prophets, are without honor in their own country; but specimens are found in nearly every yard and garden, and every flower-lover is enthusiastic in its praise. The leaf is similar to that of the common garden currant and its habit of growth, only it is very much larger, and in spring it is said to bear a great profusion of bright scarlet flowers. [*Ribes sanguinea*.—Ed.]

Almost every clear day I go out to look at Mt. Hood, only a few steps up a hill, and I see it rising in calm majesty from the dark surrounding ridges, glittering snowy white in the sun. From other hills, not far away, we can see four of these snowy giants: Jefferson, Hood, Ranier, and St. Helen's. Somehow these bold isolated peaks, standing in lonely grandeur, landmarks for hundreds of miles, seem even more inspiring than the long line of the Nevadas, seen from the California hills. No wonder that the dwellers among mountains love their "ain countree;" no wonder that something of the calm steadfastness of the eternal hills abides in their souls.

THE EUCALYPTUS AND THERAPEUTICS.

BY MARQUID DIGRAM, PHILA.

You tell your readers in your January number, what I suspect most of them were previously unaware of, that the action of the Eucalyptus is not curative but preventative; that is to say, the plant rapidly acts through its roots instead of its leaves, taking up with the former the moisture which, if left to be acted upon by the sun's heat, would produce unwholesome vapors. These ever-thirsty roots create innumerable streams in the soil, and so prevent stagnation and its unpleasant results.

Can you tell me whether the sun-flower—the large-flowered one grown in gardens—acts in a similar manner; as it also comes strongly recommended as a "destroyer of fever in the air." We are told that it was some years since grown around the grounds of a certain hospital at or near Washington, where ague had previously been

very prevalent. The result, we are further assured, was the complete elimination of ague from within the area named, a result which it is difficult to understand as being produced either by the absorption of the poison through the leaves or the extreme moisture by the plant's roots.

The sun-flower, though a rank grower, is a puny affair as compared with the Eucalyptus, which must spread out its roots either horizontally or vertically to a great distance. If the sun-flower's action coincides with that of the Australian plant, then one would suppose that it should be grown thickly like a grain crop, covering the entire ground. As the broken stalks of the sun-flower are an excellent substitute for the corn-cob as kindling, and as the seeds are greatly relished by poultry, it would not be an altogether unprofitable work for those living in localities afflicted with the ague, to give the plant a thorough test as regards its sanitary value.

Have any other plants been successfully tried for a like purpose in another climate, or could you name any which it would be worth while to try experiments with?

[There are few trees better adapted to dry up marshy land than Willows and Poplars. The roots drink up enormously. It is the cheapest kind of underdraining.]

We have no doubt that any plant that will aid in ridding the soil of superabundant moisture, is so far a benefit to public health.—Ed.G.M.]

EDITORIAL NOTES.

CARNIVOROUS PLANTS.—Mr. Francis Darwin has proved very conclusively the truth of his father, Charles Darwin's position, that the so-called carnivorous plants do make use as food of the plants they catch. A large number of plants were fed on meat, and as many on what they could get from the earth as best they could, and the difference in growth and final product were very much in favor of the meat-fed plants.

FUNGI AND DISEASE.—Prof. Burrill, of the Industrial University of Illinois, and one of the most conscientious investigators of minute fungi, has the following attributed to him, going the "rounds" in the agricultural papers: "There is good evidence that the theory of the fungus origin of the fire-blight of the pear, and the common twig-blight of the apple, is well founded, but, though particular species, or what have been regarded as species, are known to accompany the

disease, proof has not yet been obtained as to their causing the death of the limbs, nor as to the real action of any fungi upon these limbs. In the meantime, besides every attention to secure vigor and healthfulness of development with little pruning, carefully washing in winter time with a strong alkaline substance in solution is recommended for trial, and as careful removal and burning of every dead limb or twig as soon as observed, winter or summer." If the origin of apple and pear blight is, "on good evidence," fungoid, and it thus becomes an advantage to "burn every diseased twig," to keep the spores from settling on healthy wood, and spreading disease, what is meant by the statement that "proof has not yet been obtained as to their causing death?" What is the difference between "good evidence" and "proof?" Prof. Burrill has no doubt been incorrectly reported.

LIBERIAN COFFEE.—This new species of coffee which is attracting so much attention in Europe at the present time, was brought to the notice of the Kew Gardens, by the Philadelphia firm of Edward S. Morris & Co., who have been the pioneers in the Liberian trade. They have also a large trade in Palm Oil soap, which is made in the Liberian colony, from the Oil Palm, *Elaeis guiniensis*. It has been heretofore the practice to bring the oil to Europe or America for soap-making purposes. It is found that the fresh oil on the spot makes a better article.

DWARF JUNE BERRY.—The Iowa Horticultural Society warns people that agents are selling "Dwarf June Berries" for real "Huckleberries." What are Dwarf June Berries?

SUBMERGED ROOTS IN WINTER.—A case is reported in the *Journal of Forestry*, where a *Cupressus macrocarpa* was submerged for two months in the winter without injury. This accords with American experience. No tree suffers from submergence for months in winter, though a few days of submergence in the growing season is fatal. It seems also understood in France, where winter submergence is recommended for grape vines, to destroy the phylloxera.

WHAT IS A FRUIT?—At a recent meeting of the Montgomery Co. (Ohio) Horticultural Society, Professor Morgan gave a very interesting lecture on botany. At the conclusion of the lecture the following proceedings are reported:

"Mrs. Powell asked the Professor where the drops of moisture came from which are found in the Crown Imperial.

"Professor Morgan—They come from the surrounding tissue, undoubtedly. They are merely a secretion of the plant, altogether analogous to the milk of the milk-weed and that class of plants.

"A lady member desired some light upon that class of plants termed the carnivorous, and alluded to in the essay, to which the Professor replied by saying that the great Linnæus rejected the idea that there were any such plants in existence. But the great naturalist was mistaken. Such plants do exist, and it has been clearly demonstrated that they feed upon and digest the soft parts of insects caught by them. The digestion is performed by a sort of gastric juice secreted by the plant. They are found about the bogs of the Carolinas and nowhere else in the world.

"It was suggested to the Chair that if the strawberry is not a fruit, as affirmed in the essay, that 'Othello's occupation is gone'—that he (Mr. O.) is no longer a fruit-grower, but a grower of something else, and the chief point of interest is, what sort of a nondescript did he grow.

"Professor Morgan explained very intelligently and satisfactorily to all present, the difference between a true fruit and the strawberry, which is no more a fruit than the tip of an asparagus plant or celery stalk."

There is probably some misapprehension of Professor Morgan's position. The fleshy portion of the "fruit" which we so relish in the strawberry is, of course, but the *receptacle*; but even in a technical sense it would hardly do to say that the receptacle was not part of the fruit, certainly much more so than the "tip of an asparagus."

MALFORMED APPLE BLOSSOMS.—A correspondent of the *Valley Naturalist* says: "We have recently received some monstrous apple-flowers collected by Prof. Keigh, of New York. There may be seen on turning down the five minute, pointed, sepal-like organs, into which the petals are transformed, the fifteen pistils enclosed. The outer ten extra pistils form a ten-celled, superior core, and the five regular pistils, within, extend down through them to the regular five-celled ovary below. The number of petals is occasionally but four, and the pistils vary from twelve to fifteen. We see no other way of accounting for the ten extra pistils, except to consider them as transformed from the twenty missing stamens; this is however contrary to analogy, as transformations of this

sort rarely ever occur in other plants. The original tree is quite old, and is unfortunately in a dying condition. Grafts have, however, been made, so that this peculiar monstrosity will not be lost to science by the death of the original tree. It has been suggested that the fruit may also have an economic value, as, in an orchard away from other apple trees, blooming at the same time, the large, early fall cooking apples would probably be quite seedless."

JUMPING BEANS OF MEXICO.—From the so-called "jumping beans" of Mexico whose motions are caused by an insect within, Mr. Henry Edwards has succeeded in obtaining a beautiful moth of the *Tortricidae* family and probably a new species. The case is curious, as an instance of one of the lepidoptera piercing a seed capsule with its ovipositor, and laying an egg to produce a larva which will destroy the seed. This sort of performance is mostly confined to coleopterous insects. The account of this new moth was given before the San Francisco Microscopical Society.

LIGHT FOR TROPICAL PLANTS.—Professor Seeley thinks the idea that tropical plants need a large amount of light is a mistake. We are inclined to agree with him. We doubt much whether the actual amount of light in a tropical country is any greater than the year's average in a temperate one. We have been surprised to find the Banana and many tropical plants make green, healthy growth in warm rooms, where the light was comparatively limited.

THE POTATO BEETLE IN EUROPE.—Some of the European entomologists are amusing themselves with pelting Prof. Riley, because he cautioned them to look sharp after the potato beetle. This is what Dr. Candèze, of Liege, says at the Entomological Congress in Brussels, in October last. Speaking of Prof. Riley's paper, he says:

"There is apparently no doubt there was an increase in the price of potatoes at St. Louis during 1873; but the author himself, in his pamphlet, attributes it as much to suppression of culture as to the ravages of *Doryphora*—many farmers, he says, not daring to plant potatoes.

Let us hope that St. Louis is the town in which Mr. Riley resides and publishes his articles.

"Certainly the Minister for the Interior would be very much surprised if the publications of his department, by frightening the farmers without reason, produced the same result here next season.

"Another fault we find with this pamphlet is

that of extolling, for the destruction of the Doryphora, an agent of which the handling is most dangerous. Every one knows the grave accidents caused by Paris green to those who breathe the dust; one is warned with just reason against its employment in industrial arts. Medical men have warmly discountenanced its usage in the ornamentation of carpets and cloth. It is not then without surprise that we find it advised to powder the fields of potatoes with it broadcast, leaving its management in hundreds of inexperienced hands.

"It is a case in which the remedy is worse than the evil. Mr. Riley assures us as a fact that arsenite of copper decomposes, and is not noxious once that it is deposited on the earth. But before that? He says that its judicious employment has no inconveniences. We are not of his opinion; and can we reckon on the judicious prudence of a farmer's boy, to whom would be left, in most cases, the care of arsenicating the potato fields?"

All this reads very funny to us over here, who appreciate fully the value of Professor Riley's labors. The logic of the critic is wonderful. It was not the Doryphora which made potatoes scarce in 1873, but the dread of the Doryphora by the planters! In Dr. Candèze's eyes this is a great difference.

The tirade against Paris green is as funny as the rest. There is little doubt but the watch set on the Doryphora through Prof. Riley's cautions will save them a year or two's crop at any rate, which ought to be worth some millions of francs, and well worth the expense of the few thousand pamphlets distributed by European governments. But they will be very foolish if they conclude to accept Candèze's advice and throw over Riley's, and look on "the remedy (Paris green) as worse than the disease." Still it will be our gain if they do. If Dr. C. were a "bull" in the potato market he could not send potatoes higher for our interest. Riley's advice is at least for their good and not ours.

SCRAPS AND QUERIES.

THE CONSTRUCTION OF A TREE.—S. says: "Contemplating once a redwood tree in California—three hundred feet high and perhaps forty-five feet in diameter—the question arose, Out of what was this stupendous mass of wood manufactured? It could not have been made

out of the earth, for there was no hole in the ground out of which it had been sucked up. It would seem that the living force of the organism must have converted gases and water (itself another form of water) into the solid material before us. Of course we recognize a certain percentage of mineral in the ashes of the wood, but that must be a very inconsiderable per cent. of the tree. May we hear from you on this subject?

[Almost the whole of this huge mass is derived from the atmosphere, and is carbon and water. —Ed. G. M.]

THE IRONWOOD.—J. R. P., Frankfort, Ky., writes: "Which is the Ironwood, the *Ostrya Virginica*, or the *Carpinus Americana*? I have always regarded the latter as the Ironwood—in this State—but I see that on this there is a disagreement among botanists. In Torrey's *Flora of New York* he calls the former (the Hop Hornbeam) the Ironwood.

[In these parts the *Ostrya* is known as Ironwood. The *Carpinus* is "Hornbeam" in the books, but among the woodmen it is generally Blue or Water Beech.—Ed. G. M.]

THE CINNAMON VINE.—B. M., St. Louis, Mo., says: "I have not hitherto appreciated what you say about the disadvantages of common names; but I now do, at least to the extent of three dollars! Years ago the indomitable Billy Prince introduced to us the *Dioscorea Batatas*, or Chinese Yam, and, with my love of novelties, I invested a dollar therein. It was fair enough for a novelty, but the odor of roses which scented the advertisements soon disappeared, and I let my Chinese Yam go. But—tell it not in Askanon!—I saw a nice little advertisement of a "Cinnamon Vine," and invested three dollars in that same, only to find on receipt that it was my old friend, the *Dioscorea*, come back again! I wish I had them three dollars back; I am opposed to common names. Now walk straight in, Mr. Editor, and break it all up. Must I lose them three dollars? What is to be done? I am sick of common names that cost me three dollars!"

[Old things come out as new under botanical names sometimes, as well as under common ones. Of course it is easier to get into such trouble by common names than by the scientific ones, yet the "common" name is hardly responsible here. It may be by design that the name of "Chinese Yam" has been changed, so as to make a good "strike;" or it may have been

started as "Cinnamon Vine" in ignorance that it was the old Chinese Yam. No intelligent nurseryman or florist would sell a root under such a name without stating that it was "Dioscorea Batatas," because such "deceptions" or "mistakes" always react unfavorably on his permanent business. We fear "them three dollars" are "gone" beyond recovery; and the only good

advice we can give is that when you see things advertised that are not in the best nursery catalogues, whose issuers are always in the advance, wait till you do; but if you are very anxious to be in first on a new thing which even the best men in the trade have not—well, then you must pay for that glorious privilege, and even three dollars is a cheap sum to pay for it.—Ed.]

LITERATURE, TRAVELS *and* PERSONAL NOTES.

COMMUNICATIONS.

PLANT PROTECTION.

BY EUGENE GLEN.

Last winter, in conversation with a leading nurseryman, I ventured the opinion that not more than one-third of the Pear trees theretofore sold as *Souvenir du Congrès* had been genuine. He agreed with me. Another very active and intelligent nurseryman standing by insisted that the proportion of genuine trees of that variety had not exceeded one-sixth of the whole number sold as such. Be this as it may, it is bad enough; but unfortunately what is true of the variety mentioned is true of every other new variety, for which its actual merits or the efforts of its introducers have created a demand in excess of their ability to supply at *very moderate* prices. Unscrupulous nurserymen and dealers are not found willing to accept the profits of selling Apple trees at twenty-five cents each, or Pear trees at fifty cents each, when by simply changing labels the same trees may be readily passed off at from one to three dollars each, and so long as no *easily enforced* penalties are attached to the commission of frauds of this character, they will continue to be committed.

To such an extent do they now prevail that the agents of nurserymen and dealers, be their principals ever so honorable, are insulted in or refused access to thousands of houses all over the country, simply because the inmates or their friends have been so repeatedly humbugged that they persuade themselves that honesty has entirely departed from the nursery trade. I need scarcely say that this state of things works a great outrage upon the public, and that it puts a tax upon the business of each of the many honest members of the trade.

Frauds in merchandise are by no means confined to the horticultural trade, but they are so

much more serious in their results when committed in this trade than in any other that they may well be the subject of special legislation. If a man buys a box of ground spice for twenty-five cents, and it proves to be largely burned rye, his loss by reason of this cannot exceed twenty-five cents, and he readily accustoms himself to such losses; but if he buys by name an Apple tree for the same amount, thinking it is a fine sort and just what he wants when it is some worthless thing entirely unadapted to his wants, at the end of five years or more the fraud is developed. His loss then includes the original consideration and interest, the use of the ground, the care he has given the tree, and the prospective profit or enjoyment which the genuine tree would have afforded. After repeatedly suffering such losses, it can hardly be a matter of surprise that men are discouraged and ready to denounce the entire trade.

In determining what may be done to suppress this evil, it becomes important to consider what is the existing law upon the subject, and why does it fail to reach the desired end.

While it may startle some to learn it, there can be no doubt that it is now, and for many years has been, the well-settled law of England and the United States that a seedsmen who sells seeds under a name which it is not in fact, thereby becomes answerable to the purchaser to the full extent of the damage sustained, including the profits of the crop which might have been realized, estimating it at an average crop from genuine seed in that year, had the seed been genuine. (Randall vs. Roper, 96, Eng. Com. Law, 82; Page vs. Parry, 8; Carr & Payne, 769; Passenger vs. Thorburn, 34, N. Y., 634; Van Wyck vs. Allen, N. Y., 1877.

By parity of reason it will be seen that a nurseryman or dealer who sells a tree under a name which it is not in fact, does so at his peril, and is answerable for the difference in value to the

planter of the tree supplied, and the tree which purported to be supplied, at the period of growth when it becomes practicable to discover the fraud or mistake with certainty. Of course this difference may many times exceed the original consideration for the sale of the tree.

It is needless to say that if even all of those who are the victims of honest mistakes should enforce their claims under this law, the nursery and seed trades would soon be annihilated. But there is no danger of a general enforcement of this law; and it is a knowledge of this fact which prompts men to sell spurious trees, plants and seeds with impunity.

The laws must assume that nurserymen and other merchants supply just what they agree to supply, and hence it throws upon their victims the burden of proving the contrary. With most varieties the question of identity cannot be determined with certainty until the trees have fruited. This may involve waiting five years or more, and even then it may require the evidence of experts or experienced horticulturists. The production of this class of evidence is necessarily expensive, and unless the amount in controversy is large, the victims cannot afford to attempt the enforcement of their rights. Beyond all this is the fact that nursery stock is and must continue to be mostly sold through canvassers. Many of these canvassers are irresponsible. They are in the business to-day and out of it to-morrow, or they or their principals must be sought, and claims enforced against them at great distances—often in other States.

It may be said that the evil can be arrested by making it a penal or criminal offense to falsely label any tree or plant, but then we would have to encounter the same presumption of innocence. We would require the same class of expert proof. We would be obliged to wait for evidence of the alleged fraud to develop; oftentimes until all other offenses committed at the same time, save murder, would have outlawed. We would have to seek the offender where he might happen to be, and the fraud in each individual case would require to be tried separately. Experience in other things shows that the wheels of the law would require to be set in operation by the victims. In most cases this would involve an outlay which the damages sustained would not warrant them in making, and for no part of this outlay could they lawfully re-imburse themselves. Hence, except in aggravated cases, the law would remain as dead a letter as the present law is.

The question now arises, Can nothing be done to lessen this great evil? I think there can be, and it was its supposed capability of doing this that first directed my attention to a horticultural copyright law. As any discussion of this feature of the subject was omitted in the order of publication intended, I will in another communication endeavor to show how a copyright law would act on frauds, and why such a law may be expected to materially lessen the commission of such frauds.

EDITORIAL NOTES.

EUROPEAN NOTES, BY THE EDITOR.—No. 7.—I fancy the young men who learn gardening in these days, can scarcely take the same delight in their profession as did the young men forty or fifty years ago; or perhaps it may be that the older ones of to-day do not know what the younger ones are doing. At any rate, at the time of which I am now thinking it was not the fashion for young gardeners to think their school education finished as soon as the school-room ceased to enclose them. When passing through the Midland counties of England, I had a vision of one who once in a while dropped in on me, of a long winter evening, in the warm greenhouse “stoke hole,” and who, by the light of a piece of wax candle stuck in the mouth of a porter bottle, helped to conjugate Latin verbs together. My young friend was now in charge of Newstead Abbey, and one of the best-known and respected among the intelligent class of British gardeners. Besides the weight of this early attraction, I had never seen these beautiful grounds, so much of which is familiar to every one who has read anything of the history of Lord Byron. I switched off, therefore, at Nottingham, and, armed with a card of admission from Mrs. Amelia Jane Webb, who with Captain Webb delights in nothing so much as sharing with others the treasures of history and art that abound in the Abbey, I took a “fly” for the long ride into the country, in spite of the assurance that we would save much time by rail. The road took us round a cemetery in which most of the dead were in natural caves in the rock. The entrances to some of these caves presented a sight I had often read of but never seen, and I think it one of the most beautiful sights I ever saw in nature—the iridescent moss. As we looked in the entranees to some of these hollows, at some little distances, the sides would glisten with red and green and gold, which would all disappear as you reached the spot, and

leave nothing but the appearance of green paint-like slime, but which, under a lens, could be seen as a minute moss. Columns of red and white sandstone here and there supported the roofs, and made beautiful cathedral-like resemblances, in keeping with the graves. The grounds are wisely kept as nature washed them out for us, and the chief floral adornments are the yellow bedstraw, the furze, and the broom; and in spite of the beauty of many an artificial cemetery, there did seem to me a singular appropriateness in the return of "dust to dust, and ashes to ashes," in a place so fresh from the hand of nature as this.

We pass on through Sherwood Forest, made memorable by Sir Walter Scott, and the many stories of Robin Hood and his men; but little is left to suggest the tales of the olden time but tavern signs, and the names of old ruins or villages, as we pass through. The "Forest" must have disappeared long ago, and the places where the good old monks

"Sang and laughed,
And the rich wine quaff'd,
Till they shook the olden walls,"

are gradually disappearing too, in spite of the traditional regard for old ruins in England. But we found the old abbey still there. This is built on this ancient royal forest land. King Henry had slain the Archbishop à Becket of Canterbury, and, as was the custom at that time, had to bring forth fruits worthy of repentance before his sins could be forgiven, so he built this glorious pile and presented it to the church, in whose possession it remained until King Henry VIII.'s time.

I was fortunate in finding my friend, Mr. John Lawrence, at home. The gardens are kept up very much as the old monks left it, and it was particularly interesting to notice in their work thus fortunately preserved for us, what good gardeners they were. The huge terraces must have involved an immense amount of manual labor, which, if really performed by the novices, shows that they did not altogether despise hard work in their efforts for a better life. We are told by history that it is to the labor and skill of the old monks that we owe many of our enjoyable fruits and vegetables. The long, straight garden wall border, in which they made their experiments, now so many hundreds of years ago, possessed a great charm for me. They were also adepts in fish culture. They managed always to keep a good supply of the best in the "slew pond," and this so artistically arranged by

their great skill in combining the beautiful with the useful, that I have rarely seen a sheet of water that seemed to make everything about it so beautiful. They, however, unlike so many wealthy people of our own time, knew the advantages of good advice, and in the planning of their grounds had the assistance of the celebrated Le Notre, who designed the Palace Grounds of Versailles, and assisted the great Cardinal Woolsey in his gardens at Hampton Court. These sheets of water are rectangular, but the branches of neighboring trees, stooping down to kiss the placid waters, have extended some more and some less, until the margins are bayed out and inletted in a manner sufficient to satisfy the devotee of the most irregular in garden art. A great amount of this overhanging foliage was of the yew, some of the trees known to be at least 700 years old. These dark green masses gave a peculiar tint to the waters that can scarcely be described. Water birds, with their young, were darting in and out under the living shade, seemingly so little in fear of interruption, that at first I thought them tame. The breast-works of some of the dams were so completely overgrown with cotoneaster, creeping on through the centuries, that the only knowledge of their existence came from the foaming water as it dashed through the scarlet-berried branches. The landscape gardener may make a place which will be pronounced perfect, but the charm which age brings is Nature's own.

The fern garden seems especially a favorite with English ladies. It affords scope for a nice combination of earth and rock with the shade and romance of the wild woods; and here, also, I found one beautifully designed. There are piles of rocks and caves, and everywhere, inside and out, the filmy foliage of some beautiful fern. Even history is made to lend a hand in the intellectual feast in many memorials; and among them all I could not help feeling a more than usual interest in a small carved sycamore column from Thebes, perhaps among the oldest pieces of workmanship of civilized man. We may have advanced some in the arts as we have had opportunities afforded us, but here is the evidence that when the human race was being rocked in its cradle, it knew how to do first-class work.

The grounds are full of interesting memorials. Livingston was a guest of Captain Webb, and here wrote the last work he ever published. As is the prevalent custom in this country, his presence here is marked by a tree planted by his

own hand—in this case our famous mammoth of California. The memorial tree of all others that interests the traveler is one planted by Byron before he left the home of his fathers. This is an English oak, and is now 6 feet 9 inches round, not a slow growth, as so many think is the fate of all oaks, by any means. If the relic-hunters had their way, there would not be much growth left to tell of its increase, but not a twig is allowed to be broken off. It so happened that a violent rain storm the night before had placed a very little twig with a couple of leaves or so on the mossy lawn below, and for all my smiles at those who "gathered old sticks," and pulled mortar out of old walls, my companion felt highly privileged when she was permitted to bring the treasure away to her home in the New World. The celebrated twin tree on which Byron cut the initials of himself and sister, is not an oak as stated in some of the biographies of the poet, but a beech. Augusta's branch has been long since dead, but the piece is preserved by Captain Webb, as is everything belonging to the poet or any one connected with him. A straight walk through a dense wood, the walk made more dark than it would be by being taken through a matted mass of Rhododendrons, is a particularly gloomy place, but was a favorite haunt of the young poet. The gloomy effect is heightened by full size statues (of course, copied from life) of satyrs and imps of various kinds, and it is said to be next to impossible to get any of the neighboring peasantry to go through the place, and among whom it is reverently known as the Devil's woods.

A cold English rain, thin shoes, an umbrella, and rheumatic limbs to carry it along, are not very favorable to garden sight seeing, so we had to make up the rest of our day in exploring the rich treasures of the old Abbey itself, and admiring the magnificent scenery as displayed from every window, as we wandered from room to room, and all made by the art of the landscape gardener, a wonderful tribute from the hand of man!

But I must drop for the present the large country seats, and say a word or two of the beautiful public gardens with which England abounds, and which, indeed, constitutes some of her proud institutions. We leave Newstead Abbey, and, retaking our "fly," conclude to go-around Robin Hood's barn, instead of along the side of which we came; for we sup-

pose it is pretty well known that this celebrated structure comprised the many thousand acres of Sherwood forest, and that the King's deer were always stored therein for Robin, whenever venison was scarce. We reached Nottingham at night fall after a charming drive, and put up at "The George," uncomfortably crowded by Americans, chiefly drawn there through that city being the center of the lace trade. The good lady—most of the English hotels seem kept by ladies—by hook and by crook, managed to make up a suite of rooms for us, and we were made quite comfortable. Staying over Sunday in this town, it was interesting to notice that no one, not even the poorest, seemed dressed without a rose in his button-hole or her bosom. My readers will take notice that I say a rose, and not a rose-bud; but I will not risk their good opinion of me by giving the circumference of the roses in inches. The fact, however, will give a good idea of the climates of the two countries. Under such circumstances with us, the rose would be a withered corpse of a flower in ten minutes. It was a pleasant sight to see the town and its people on this fine summer's day. Almost everywhere that I have been, in the Old World, on Sunday or in week days, I see in every town some signs of wretchedness, together with evidences of culture and wealth. I suppose Nottingham must have its poor quarter as the rest, but if so, I could not find it. Neat lace curtains in every window; some love for art in humblest homes; neatness of dress and appearance in the poorest, and flowers in yards and windows everywhere. My chief visit to Nottingham was to see its public gardens of which I had read in my American home, and I thought no wonder that such a town had a garden of so much reputation, when I saw and talked with people that lived therein, for, as I have before noted in these recollections, the measure of an Englishman's refinement can always be taken from his garden. I fancy, however, it will be best to defer an account of these public grounds till the next number, when I may perhaps work up those of several of the English and French cities into one chapter.

THE GARDENER'S MONTHLY AND NO GARDEN.—S. J. B., of Biddle University, Charlotte, N. C., writes: "If it should be any encouragement to the publisher and the editor, I might say that I appreciate *THE MONTHLY* so highly, that I have taken it the past two years merely for the general information contained in it, although I had no ground to cultivate; but here-

after I shall make use of Mr. Mechan's experience to my own profit, I trust. Paradoxically, one need not 'vegetate' with THE MONTHLY on his table."

MELBOURNE BOTANIC GARDEN. — Baron Von Muller, to whom we owe the introduction at the Centennial of the majestic Australian tree ferns, receives much praise from the Melbourne *Argus*, for what was accomplished when he was at the head of the Botanic Garden there.

ANDREW MURRAY. — All who are interested in the coniferous trees of the Pacific coast, will be familiar with the name of this gentleman, whose decease the English papers have just announced. He was among the earliest of the describers of the coniferous trees of the Pacific coast, and we owe much of our knowledge of them to his labors. American botanists might differ with him as to matters in relation to these plants, but he never allowed differences of this character to interfere with the most cordial personal relations, and in this exhibited the highest type of scientific character. The services which he had rendered to American Botany obtained for him an election to corresponding membership in the Academy of Natural Sciences, an honor we know he highly appreciated, as, in a letter to the writer but a few months before his death, he expressed his determination to visit the institution should he ever return to America, "though he would have to go a hundred miles out of his way to do it." He took a great deal of interest in the probable introduction of the Colorado Beetle into England, knowing from actual experience on this continent how destructive is its character; and much of the activity in England in devising schemes to save the English crops from destruction, is due to him.

TRANSACTIONS OF THE NEBRASKA STATE HORTICULTURAL SOCIETY. — From D. H. Wheeler, Secretary, Plattsmouth, Neb. We always value these as keeping us posted on the successful progress of horticulture in a State where so much has to be learned from actual experiment.

PROCEEDINGS OF THE WORCESTER COUNTY HORTICULTURAL SOCIETY, MASS., FOR 1878. — From E. W. Lincoln, Secretary. These are always among the most valuable Horticultural Proceedings we receive. In the present, are essays on the Apple, by O. B. Hadwen; the Pear, by James Draper; the Strawberry, by W. H. Earle; Garden Vegetables, by Sylvanus Sears; and the annual reports of the Librarian and Secretary. In our last year's notice of the Proceedings, we called attention to the reflections made by the Secretary on the Pomological judges at the Centennial. He thought they might be honest, but were incapable. What we said about that is quoted in this volume, and which the Secretary thinks "concedes everything essential." Dissatisfaction with judges appears, however, to be chronic with the Worcester County Society. The Secretary says of their own judges, "A miracle would be needed to provide you with committees, whose tireless services and adequate knowledge should be at

your beck and call, frequently till midnight, without even the poor retainer of rations or the prospect of the most meagre pay. Nevertheless dissatisfaction exists." The Centennial chickens have evidently gone home to roost.

THE LONDON FLORIST AND POMOLOGIST, which, under Mr. Thomas Moore's management, has so long had a successful career, and which gives such admirable colored plates of fruits and flowers, enters on a new series, with a much larger page than before. This will admit of plates of larger things than heretofore—a Californian pear, for instance.

VICK'S ILLUSTRATED CATALOGUE. — It is impossible to estimate the good which the modern catalogue does in spreading substantial information. In this before us a species of every genus is given in illustration, so that people at a glance can have an idea of what the whole genus is like. Some of these catalogues which people get for nothing are often worth more, in a botanical point of view, than old-fashioned treatises that cost a great deal of money to procure. Of course they are not always up to the latest botanical rules, as, for instance, *Bartonia* as here given, the botanist would call *Mentzelia*; but for useful pioneer work they cannot be excelled.

VEGETABLE PLANTS.—HOW TO GROW THEM. — By Isaac Tillinghast, Factoryville, Pa. Published by the author. This is a neatly bound little book of about 100 pages, which expresses its full measure of usefulness in its full title. We have seen few works of its class likely to be more useful to those it is intended to serve.

CORRESPONDENCE BOTANIQUE. — By Edward Morren Liege, Belgium. This, which is a list of botanists, botanic gardens and nurseries throughout the world, has been found so useful that the fifth edition is here called for.

MOULD MAKING ANTS OF THE ALLEGHANIES. — By Rev. Henry C. McCook, Philadelphia. Published by John A. Black, 1334 Chestnut St., Philadelphia. Price 75 cents.

"Go to the ant thou sluggard; consider her ways and be wise," was a very good admonition in its time, but it was good for others as well as the sluggard. Indeed it is doubtful whether the wise man who recommended this remedy for laziness knew a hundredth part about the ant that he might have known had he lived in these days, and had Dr. McCook for a teacher. It has the merit of not being "spun out" in the text, and it is fully illustrated by plates taken from photographs. We have given the title in full, as the many free lectures on ants and spiders which Dr. McCook has given the public, deserves all the encouragement those who love intelligence can give. An interesting fact developed by Dr. McCook that we knew not of before, is that the "carpenter ant" does not confine itself to dead wood in its house-building operations, but takes to living trees; and there are many cases in which borers or some other "worms" have the odium of injuring trees which really should be laid at the door of these industrious but often annoying little creatures.

HORTICULTURAL SOCIETIES.

COMMUNICATIONS.

SOUTHEASTERN KANSAS HORTICULTURAL SOCIETY.

BY H. E. VAN DEMAN.

The fourth annual meeting of this society was held at Humboldt, on the 9th and 10th of Jan., 1878. The attendance was good, and the specimens of fruits and flowers upon the tables creditable. Mr. James Truitt, of Quincy, Ky., sent about ninety varieties of apples to compare with those of Kansas. Owing to early gathering and long transit, they did not compare favorably; but Mr. Truitt certainly deserves the thanks of the people here for his interest shown.

An appropriate address of welcome was delivered by Hon. John R. Goodin, and responded to by D. B. Skeeles in behalf of the society.

The society proposes to hold a fruit show next fall, in connection with one of the agricultural fairs, within the district.

The officers elect are H. E. Van Deman, of Geneva, President; D. B. Skeeles, of Galesburgh, Vice-President; G. W. Ashby, of Chanute, Secretary; C. C. Kelsey, of Humboldt, Treasurer; C. H. Graham, of Le Roy, J. B. Torbert and S. B. Roth, of Chanute, Trustees. The next annual meeting of the society will be held on the first Wednesday and Thursday of December, 1878, at such place as the board of directors may direct. Any person who wishes to avail himself of the advantages of a copy of the proceedings of the society, which is published with those of the State Horticultural Society, can do so by sending his name and fifty cents, as an annual membership fee, to the secretary.

EDITORIAL NOTES.

ADDRESS OF MARSHAL P. WILDER.

(Continued from page 64.)

The foreign market for peaches will be very great if prices can be made moderate, and when our refrigerating ships shall be perfected, England can take much of the surplus of our immense crops of this fruit. The same is true of pears, but all sales depend on the condition of the fruit.

Formerly a large crop was not a blessing, owing to limitation of the market and the expense of gathering the fruit, and it has been estimated that a loss of several millions of dollars has been sometimes sustained in an abundant year by the waste of fruit. The whole crop may now be saved and utilized by the new methods which are being constantly invented for curing and distributing this surplus. In fruit districts large amounts of capital are invested in establishments for the drying and canning of fruits, which promise to put the surplus of abundant seasons in condition for preservation till wanted for consumption or exportation. Some of these are yet to be tested, but no doubt exists that we shall eventually thus utilize our fruits,

and make them not only profitable, but a source of increasing revenue to our country.

With reference to the demand for dried fruits the consumption is rapidly increasing, and if dried peaches can be furnished at as low prices as apples, the demand, it is thought, will be very great. Of dried fruits there were exported for the year ending June 30, 1877, 14,318,052 pounds. Of preserved and canned fruits, especially peaches, there have been exported 762,344 dollars' worth in the year ending June 30, 1877. The trade for these is well established and the demand is constantly increasing. Although the exportation of fruit has been going on quietly for a long time, it was not large till the year 1865; but since that time the trade has been rapidly developed. These exports have varied much in yearly amounts, occasioned by scarce or abundant seasons. In 1861 the amount was only \$269,000. In 1871 it was \$509,000, while for the year ending June 30, 1877, it amounted to \$2,937,025, as kindly furnished me by Dr. Young, chief of the Bureau of Statistics—showing an increase of more than five-fold for the last five years.

CROSS-FERTILIZATION.

Whatever the fruit cultivators of ancient times may have known in regard to the cross-impregnation of varieties for their improvement, we have no evidence, if we may judge by the quality of the fruits which have come down to us, that they were acquainted with this process. The first experiment to ascertain the possibility of producing varieties by cross-fertilization appears to have been made in Germany, by Koelreuter, who published reports of his proceedings in the acts of the Petersburg Academy, about one hundred years ago. Knight, Herbert and the Lindleys commenced the work some fifty or sixty years since, but it had scarcely been recognized by Duhamel, Noisette, or Poiteau, in their writings, and Van Mons absolutely discouraged it. Poiteau remarked that all of the ameliorated and superior fruits had their origin in woods and hedges, where superior fruits were rare and unknown. Nor was it more than alluded to by Cox, Lowell, Manning, Thomas, Prince and such leaders in our own land. Cox, who may be styled the first American pomologist, alluded to it as "a curious discovery which had been made by Mr. Knight in the natural history of fruit trees, by which one variety might be impregnated with the farina of another, some of the products partaking of the properties of the male, others of the female parent."

But with the publication of Hovey's Magazine of Horticulture, Downing's Fruit and Fruit Trees, and the Horticulturist, the experiments in hybridization became well known in our country. This process, applied to the grape, said Andrew Jackson Downing, thirty years ago, will give hundreds of hardy kinds, adapted to every orchard and garden in the Union. How fully this prediction has been fulfilled we have seen in the new varieties of hybrid grapes produced by Allen, Rogers, Moore, Campbell, and

especially by Mr. Ricketts, whose wonderful success in cross-fertilization has been achieved on the very soil where this prophecy was made. With this knowledge commenced a new era in the production of improved varieties of fruits, flowers and vegetables; an era which has so enlarged the sphere of experiments in fertilization that its originators will ever be gratefully remembered as benefactors to mankind, who have illustrated one of those wonderful and beautiful laws by which the whole universe is regulated, and by which improvement in fruits, vegetables, and animal life may be advanced until absolute perfection is attained.

NOMENCLATURE.

The progress in correct nomenclature has been most gratifying, and the labors of the American Pomological Society, in connection with its great exhibitions of fruits, have had a prominent leading influence in this result.

Mr. John J. Thomas says: "I well remember the continued disappointments I met with when a young man in procuring trees that were true to the name—in some fruits accuracy seemed to be decidedly the exception. In corresponding on this subject some forty years ago with the elder Robert Manning, he remarked that the account of my disappointment was a history of his own." At the present time, all respectable nurseries are accurate throughout, and purchasers scarcely find an error. One of the objects of the founders of this Society was to correct the evils which formerly existed; to aid in determining the synonyms by which the same fruit was known, and thus to establish the correct names and impart a knowledge of the value of varieties.

Much has been accomplished by the Society's Catalogue, whereby a permanent foundation has been laid, which will eventually result in the complete abrogation of such names as are used without fitness, propriety or even truth. We especially desire, for the honor of our science, that all inelegant or absurd names, such as Cat-head, Hogpen, Sheepnose, Stump the World, and the like, should no longer be applied to fruits. In this respect we have made great advances by the suppression of vulgar names and the adoption of such as have reference to the origin, introduction, or the characteristics of our fruits. How absurd to give to a luscious fruit, radiant with the loveliest tints of nature, and fragrant with the spices of Arabia—a fruit possessing almost supernal grace—such vulgar names. How inappropriate the dedication of fruits to warriors and statesmen, to generals and colonels, presidents and senators, or the long roll of titled nobility, which have no natural connection, or analogy, with fruits. How much more appropriate, for instance, are the names of the Baldwin and Porter apple, the Bartlett and the Sheldon pear, the Early Crawford and Late Admirable peach, the Concord grape, and Wilson's Albany strawberry. Some of these have come down to us from former generations, and will survive as long as the varieties which bear them exist, without the use of three

hundred and seventy names for twenty-nine kinds of apples, as stated in Dr. Howley's Report of 1875. Our catalogue already abounds with the names of fruits of American origin, and they will ere long surpass in number those of foreign climes. Let us, then, labor to establish a pure, proper and practical nomenclature of fruits for our land, which shall be correct, definite, intelligible and which shall endure for all time.

Among the most important acts of this Society was the rejection, as unworthy of cultivation, (in 1858, nineteen years since,) of 625 varieties of fruits, then known in the catalogues of nurserymen, but since suppressed. Not less important was the adoption of its own Catalogue of varieties adapted to the various sections of our widely extended country. This took place in 1862, but it was reserved for the year 1871 to inaugurate the present grand quarto form arranged in Northern, Southern and Central Divisions, similar in climate and other characters affecting fruit culture, with columns for fifty States and Territories, thus presenting to the world the most perfect and practical catalogue of fruits extant. Thus shall we improve our pomology and thus hand down inestimable blessings to the world; not for ourselves only, but to gladden the sight, gratify the taste, and cheer the hearts of the advancing millions that are to occupy this blessed land. And what more enduring memorial of valuable service to posterity can we render than to transmit a fine fruit which shall survive when we have passed from our labors on earth. The pleasures of sight enhance the pleasure of taste, and thus generation after generation will rejoice in the beauty as well as the richness of fruits which have adorned our orchards and cheered our social meal, and which, with each successive year, cause us to realize the thought of the poet, that

"A thing of beauty is a joy forever."

OHIO HORTICULTURAL SOCIETY.—Mr. Bateham informs us that the annual meeting of the State Horticultural Society, at Ravenna the past week, was counted the best of the thirty years' history of the society.

The officers of the Horticultural Society elected for the ensuing year are mostly the same as last year: Dr. J. A. Warder, President, North Bend; N. Ohmer, Vice President, Dayton; M. B. Bateham, Secretary, Painesville; G. W. Campbell, Treasurer, Delaware; Leo Weltz, Wilmington; J. J. Harrison, Painesville; G. M. High, Middle Bass; Frank Pentland, Lockland; and C. C. Miller, Norwich, Committee.

MONTGOMERY (OHIO) HORTICULTURAL SOCIETY.—This well known and useful society seems in a prosperous condition. Its last report tells us that "during no preceding year have our meetings been so uniformly well attended as during the one just closing, and at no former time have our discussions been participated in by a larger number of people, imparting thereby unusual interest to our proceedings, both verbal and printed."

THE
GARDENER'S MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

Vol. XX.

APRIL, 1878.

Number 232.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

April is a good planting month. There is not much art in planting trees, though it is often much of a mystery. Not to let the roots dry for an instant between taking up and planting, everybody knows, but everybody don't do it; in fact, everybody deceives himself. We have seen this distinguished individual leave the tops of trees exposed to the sun, with a mat or straw thrown over the roots, and think all was right—or heel in for a day or two, by just throwing a little dirt over the roots. This is a little good; but everybody's fault is, that although this may be ten minutes of good, he expects to get ten hours, or even ten day's value out of it, and thus he suffers more than if he had done nothing, because he forgets that the branches evaporate moisture from the roots in a dry wind, and the juices go from the roots through the branches, very nearly as well as directly to the air from the roots themselves. So with heeling in. The soil is thrown in lightly, or at most just "kicked" down. "It is only temporary," very few of the roots come in contact with the soil. They can draw in no moisture to supply the waste of evaporation, and thus they stay day after day—everybody satisfied because he sees the roots covered, really worse than if they had been exposed. We have no doubt that *more trees are lost from imperfect heeling in* than from any other cause whatever. Of course, if the tops be covered as well as the roots, there is less waste of moisture and more chance of success.

This hint will help us in planting. That is, *pound* the soil in well about the fibres, so that they may be in close contact with it; or they cannot draw in the necessary moisture. Should the trees appear a little dry, or the roots badly mutilated in digging, or have few fibres, cut away the plant according to the severity of the injury. It is scarcely necessary to repeat that for this evaporation reason, it is best to plant trees when the ground is rather dry, because it then powders best in pounding, and gets well in about the roots. Wet ground *plasters*, and leaves large hollows in which roots cannot work.

Where evergreens can be benefited by pruning, April is a very good month to attempt it. If a tree is thin in foliage at the base, the top of the tree, leader and all, must be cut away. It makes no difference what the kind is, all will make new leaders after being cut back, if properly attended to. We make this remark because there is a prevalent idea that Pines will not stand this cutting. Of course the trimming should be done in a conical manner, so as to conform to the conical style of the evergreen tree. Sometimes an evergreen, especially a Pine, will rather turn up some of the ends of its side branches than push out another leader; when this is the case, cut these away, and a real leader will form the second year.

Evergreen hedges should be trimmed now, cutting them conically, so as to give light to the lowermost branches.

There is so much to be done in April, that the briefest hints must suffice. First, of course, we must prepare the ground for planting. Soil

loosened two feet deep dries out less in Summer than soil one foot deep. Rich soil grows a tree larger in one year than a poor soil will in three. Under-drained soil is cooler in Summer than soil not under-drained. The feeding roots of trees come near the surface; therefore, plant no deeper than necessary to keep the tree in the soil. If there be danger of its blowing over, stake it, but don't plant deep. One stake set at an angle is as good as two set perpendicular. Straw or mat set round the tree keeps the bark from rubbing. Large stones placed around a transplanted tree are often better than a stake. They keep the soil moist, admit the air, and encourage surface roots. Shorten the shoots at transplanting. This induces growth, and growth produces roots; and with new roots your tree is safe for another season. Unpruned trees produce leaves, but little growth, and less new roots.

Unless inside of a round ring, or circular walk, don't plant trees or shrubs in formal clumps. They are abominations in the eyes of persons of taste. Meaningless irregularities form the opposite extreme. Remember, "art is nature better understood."

COMMUNICATIONS.

CARPET BEDS.

BY C. J. BJORKLUND, HAMPTON, VA.

In Germany the arrangement of bedding plants is very neat. At the numerous villas in the vicinity of Hamburg there are some very good ribbon and carpet beds to be seen, the style being light, and not so sharp, geometrically, as that of the English. In the gardens at Paris are some splendid ones, especially in the Jardin de Luxembourg, Jardin des Plantes, Jardin des Tuileries, Parc de Monceaux, Square des Buttes Chaumont, and Champs Elysees, etc. In France there is in some places an excavation dug out, on which bottom the so-called carpet beds are arranged, in order to obtain a view of them from above, while in the parks of London the beds are often raised a few inches, in grass to make them show distinct above the green lawn, and both methods look well.

In designing, there is hardly any limit for variation, but it must always be kept in view to join one sort to another of greatest difference in color, the principles being about the same as in bouquet making. I beg leave to give a few illustrations, with description of arrangement, leaving it to your individual consideration.

The beds to lay three to five feet from the

walks, should be quite flat, with sharp sloping edges or sides, on which should be planted Echeverias, Sempervivums, Sedums, etc. After the planting of the two first mentioned, a coat of clay and soil made up into a thick mortar to be given around the plants, to prevent the soil from being carried away from the roots, or the breaking of the edge, by the rain, or watering, will be found very beneficial.

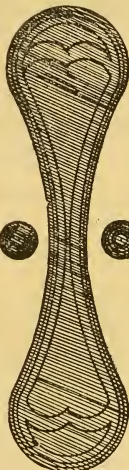


Fig. 7.

FIG. VII.—1, *Alternanthera amabile latifolia*; 2, *Alternanthera versicolor*; 3, *Pyrethrum parthenifolium aureum*; 4, *Alternanthera amœna*; 5 (the sides), *Sempervivum calcareatum*.*

FIG. VIII.—Ten feet in diameter, an exception, intended to have an even slope from the center, which is supposed to lay one foot above the lawn. The center, 1, is *Coleus Emperor Napoleon*; 2, *Santolina incana*; 3, *Pyrethrum parthenifolium*; 4, *Alternanthera versicolor*; 5, *Echeveria secunda glauca*; 6, *Alternanthera paronychioides*; 7 and 8, *Mesembryanthemum cordifolium variegatum*; 9, *Sempervivum Californicum*.

FIG. IX.—Twenty-four feet long by eight wide.

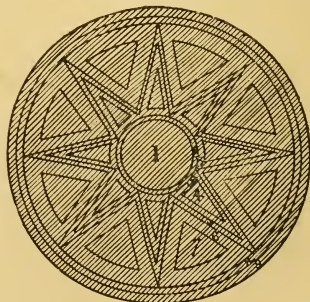


Fig. 8.

1, *Agave Americana folia. variegatum* (single specimens in the center of all the circles); 2, *Echeveria macrophylla*; 3, *Pachyphytum bracteatum*; 4, *Sempervivum ciliare*; 5, *Sedum*

* (The outer circle or border will always represent the sides.) The circles, in the center, a specimen of *Sedum elegans pictum*; around them *Alternanthera magnifica*, to *Pyrethrum*, *Alternanthera versicolor*, and *Sedum acre*.

glaucum; 6, *S. acre elegans*; 7, *S. spectabile* roseum; 8, *Leucophyton Brownii*; 9, *Pyrethrum parthenifolium aureum*; 10, *Alternanthera paronychioides*; 11, *Leucophyton Brownii*; 12,

Alternanthera amena, also bordered by *Pyrethrum*; and 6, *Sempervivum montanum*.

1, are small specimens of *Agave Americana variegata*; 2, *Echeveria sanguinea glauca*; 3,

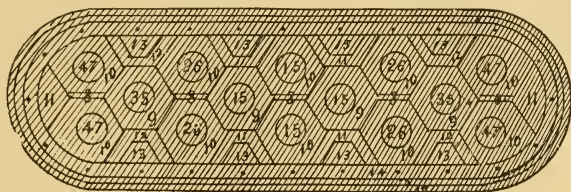


Fig. 9.

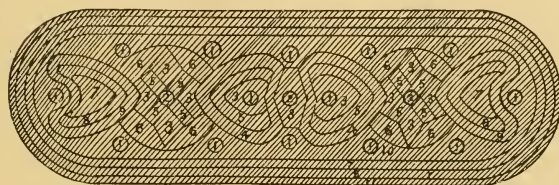


Fig. 11.

Achillea umbellata; 13, *Hutchinsia alpina*; 14, *Mesembryanthemum cordifolium variegatum*: the dots that will be noticed on the same border are single specimens of *Echeveria metallica*, and *Sempervivum Donckelari*, or anything similar will do; 15, *Alternanthera amena*; and 16, *Echeveria secunda*.

FIG. X.—Supposed to be ten feet in diameter. 1, *Yucca filamentosa* fol. var. Around the spe-

Hutchinsia Alpina; 4, *Mesembryanthemum*

FIG. XI.—Twenty-four feet long by eight wide. *cordifolium variegatum*; 5, *Alternanthera versicolor*; 6, *Leucophyton Brownii*; 7, *Pyrethrum*; 8, *Ajuga reptans rubra*; 9, *Veronica candida*; 10, *Alternanthera paronychioides*; *Echeveria pumila*.

FIG. XII.—Of ten feet diameter. 1, a specimen of *Yucca filamentosa*; 2, *Pyrethrum*; 3,

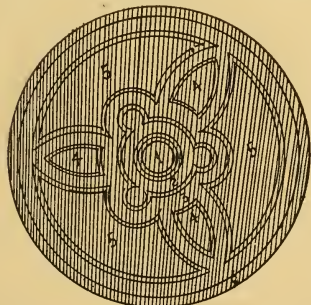


Fig. 10.

cimen to cover the ground, *Sedum acre*, then a circle of *Aloes*, and another of *Pyrethrum*; 2, *Alternanthera paronychioides*, bordered by *Pyrethrum*; 3, *Leucophyton Brownii*; 4, *Alternanthera versicolor*, bordered by *Pyrethrum*; 5,

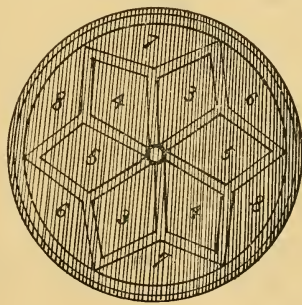


Fig. 12.

Oxalis tropaeoloides; 4, *Alternanthera magnifica*; 5, *Alternanthera spectabile*; 6, *Sedum acre*; 7, *Lobelia Crystal Palace*; 8, *Cuphea platycentra*; 9, *Cerastium tomentosum*; and 10, *Sempervivum Californicum*.

NOTES FOR 1877.

BY REV. E. P. POWELL, CLINTON, N. Y.

Perhaps the most useful contribution to the public that a horticulturist can make is to give the results of his year's work. 1877 has been so fruitful that it has given us an opportunity to test thoroughly and favorably many kinds of fruits and flowers.

1. In answer to your question concerning the apple blight. It has reached as far north as northern New York. It is occasionally the cause of death to trees, especially those cultivated in rich soil much manured. Apples grown in sod seldom suffer badly. There is, however, a difference in varieties. The Pound Sour and Crab apples with me were considerably defaced, and the crops damaged.

2. The theory is again confirmed by the experience of the year that pear blight is at least most successfully prevented by culture in sod; by feeding with salt and ashes and keeping the trees well mulched, perhaps with sawdust or ashes is best. Any exposure of the soil to sun and weather has a disastrous effect.

3. The grape crop has been admirable, ripening tolerably in spite of too frequent wet days throughout October. I am inclined to think more and more highly of the Goethe, if grown on open trellis, in a warm exposure. Of the Iona, well ripened, I would raise my figures constantly. Both are withal excellent-keeping grapes. I have Ionas, now the 10th of December, in as good condition as my Isabellas. The Diana keeps best of all; but is so very tough and skinny that even those who like its peculiar flavor cannot enjoy it. But we must have it. The simplest and best method of preserving grapes for Winter is after all to spread them thinly on oil-cloth floors in cool dry rooms; or on shelves similarly covered.

4. Among small fruits I have given up the endeavor to raise cultivated blackberries without cultivation. No matter what may be said by a few who have raised an occasional crop in grass, we must take the Kittatinny in hand and rule it. Mine are wired to stakes and well sheared in. The easiest method is to clip the arms with an ordinary sickle.

5. In managing extensive hedges I have found this same instrument of great service. For Buckthorn I generally use shears; but for Arbor Vitæ I have rarely use for anything except a moderately sharp sickle. Give generally an upward stroke, and walk backward. You can

trim in one hour in this way as much as you could with shears in half a day, and do it quite as well. Of course this will not apply to hedges not already well formed. By the way, most evergreen hedges that we see are seriously injured by making the sides too erect, and flattening the tops. It is impossible to keep for a long time a handsome hedge of Arbor Vitæ or Hemlock without the base is nearly double the thickness or depth of the top, and the top cut in an arched form like nature.

6. It is exceedingly necessary to eliminate only tolerable small fruits from the catalogues as well as from our gardens. For instance, the Turner Raspberry, a worthless humbug, to one who can have the Philadelphia. You can say no better of most of the new strawberries. The older nurserymen can do us good service by classifying established fruits. The MONTHLY has done much good by its conservation concerning novelties.

7. In landscape gardening plant for all seasons. There are some things which make no note of themselves until late Autumn. Others like the purple berberry, and some of the dogwoods, are valueless except in very early Spring.

PRESERVATION OF THE LEADING SHOOTS OF EVERGREENS.

BY SAMUEL PARSONS, FLUSHING, N. Y.

One of the false impressions that have long prevailed with much force and endurance, is the alleged necessity of preserving the top shoots of evergreens. Birds are looked upon with apprehension and disgust as they press destructive feet on this valuable growth. Stakes are even used to support such important elements of health and symmetry; and the purchaser who seeks choice specimens, carefully avoids all evergreens that have lost their leaders, almost superstitiously regarding it as impossible that the lost, in this case, can ever return.

What are the real facts of the case as indicated by intelligent experience? Simply that the destruction of the leading shoot is often an actual benefit to the tree when its aspiring habits become too strong, and that, so far from birds fatally injuring the symmetry of trees by breaking the topmost shoots, cases happen, frequently, where the preservation of symmetry has been largely due to the action of their little feet.

As long as the leader grows in due proportion to the rest of the tree, its presence is most necessary; but, unfortunately, this upward tendency,

when excessive, seems to draw away the sap from properly doing its work in the tree's lower portions, or, in other words, destroys the equilibrium. Diminished growths then appear at the base, exhibiting irregular, open spaces in the foliage which in that part should be most dense. The growth, forced aloft, becomes concentrated farther and farther up the tree, until all symmetry is destroyed, and we behold a monstrosity, where we had gloried only a few years before in perfect proportion and grace. Silver Firs are especially liable to this tendency, and consequently are apt to possess their highest beauty at a comparatively early age.

An efficient remedy may be applied to all evergreens by pruning such shoots during youth, until a satisfactory base is acquired, when a very occasional removal of the offending member, will readily prevent deformity. The fear which sometimes exists that the amputated leader will never return, is perfectly groundless; although, when the operation is performed on a plant of considerable age, reappearance may be delayed for several years. This delay will however, be found rather a benefit than otherwise, as in the meantime, the proper furnishing of the tree will be established before any strength of the sap is drawn off to assist the upward growth of the leader.

The lesson taught, of course, is that the equilibrium of the various parts of the tree should be always maintained by pruning any shoots that evince rampant tendencies. Systematic management will thus preclude the necessity of all severe pruning in the sense of amputation.

The simple processes hereby pointed out are doubtless familiar to most experts; but it has been our wish to secure from all who possess evergreens, a greater attention to such operations. It is simple pruning with thumb and finger, or knife, and not shearing into formal shapes. Only experience can afford an adequate conception of the quality of growth thus retained.

ROSES BLOOMING TO THE GROUND.

MRS. C. S. JONES, MONROE, MO.

The rose is such a universal favorite, that one need scarcely apologize for making any suggestions that might appear likely to aid those who (like myself) must have them blooming both winter and summer. So much satisfaction have I had in growing certain varieties pegged to the ground, and so seldom have I seen this plan followed, that I begin to think its beauty and value

are not universally known; hence the idea of inviting the attention of your readers to this special mode of propagation.

The management is extremely simple: a deep, rich loam in an open situation, but not exposed to rough, high winds, and to select such varieties as are known to do well as ordinary standards, and are on their own roots. I find the following very satisfactory: Madam Margotten, Madam Bosanquet, Lamarque, La Pactole, Hermosa, Devoniensis, Duchess de Brabant, Arch Duchesse Isabella, Beauty of Greenmount, Agrippina, Gen. Jacqueminot, Jean Goujon, La Reine, John Hopper, and Washington; all of which I received with a hundred more from the nurseries of the "Dingee & Conard Rose Co.," who, it is well known, send out specially fine plants; not one of mine at least, ever wilted.

Do not attempt to grow worked roses in this way, for the suckers from the old parent will choke them. A bed for this purpose may be started in March or October; but whether in Spring or Autumn, pack the surface of the bed immediately after planting, and each spring after pruning and clearing, tramp the soil down firmly. This holds good I find with all rose beds.

If you use small plants, do not prune the first year, but peg down all new shoots; for this purpose I use strong hair-pins. If, however, they are vigorous, cut down six or eight inches from each shoot; what we want here is a vigorous growth, so as to have abundance of flowering shoots the next year. Keep watered the first season and cut off the ends of all flowering branches, and the hips as soon as done flowering, and then soak the bed with manure water, repeating this every third day for a month, which will soon start the plants into a new growth.

These plants will become well established in a year, and will grow on vigorously all the season, sending up strong young shoots about three feet in height, which, with the ever-blooming class, will be a mass of flowers each month. Peg down the young shoots over vacant spots of ground, and if too many are made, cut away the weakest of them, and keep those pegged down about eight inches apart.

As a greater quantity of blooms are obtained from young than from old wood, it will be seen that each year the wood of the preceding season is to be cut out. Before covering for the winter remove the pegs, so as to allow it to rise up a little from the ground and cut away the old

wood, then cover with sods and a layer of manure. Early in March cut back all the shoots. The strong ones to two feet, the weakest to a foot or sixteen inches, fork in the manure covering and tramp down well; we are then ready for the season, and right royally will the queen of flowers show forth her beauty.

An English work names the following roses for this purpose: William Griffiths, William Jessee, Chas. Lafevbre, Annie Alexieff, Senateur Vaisse, Alfred Colcomb, Baronne Prevost, Gen. Washington, Gen. Jacqueminot, Jean Goujon, La Reine and John Hopper. I believe that some prefer roses on Manetti stock for pegging down, but I like them on their own roots. Hazel-rod cut into lengths of three and four inches make excellent forks for pegging.

A rose mount is beautiful covered in this way, and where this is large various combinations of scarlet Geraniums and Delphiniums (the latter pegged down), Cloth of Gold and Blue King Lobelia will form a lovely edge to circles of bloom; but to begin to enumerate the charming effects of combination in this regard is to occupy so many columns of the GARDENER'S MONTHLY that I should be voted a bore.

I had intended when I commenced to speak of a Rose Temple, Rose Wilderness, and several other pretty rose arrangements, to which I am partial, but the pegged-down bed has led me astray.

There is a point, however, and upon which I would like to say a word. There are many ladies who do not possess the advantage of a heated conservatory, but depend upon bay windows or small plant-rooms, for their winter treasures; the temperature of these frequently grow so low during the night that their plants are found entirely frozen. Now if these persons were to use one of the small kerosene stoves during intensely cold weather, merely lighting it at bed-time, they would find it to answer every purpose, and they are both economical and convenient. During one of our most severe winters I kept a large bay window (stocked with delicate ferns, &c.) quite safe by merely filling a huge wash-kettle with boiling water and placing it beneath the window box, which was perforated with auger-holes in the bottom. This window was on the north side of the house, with a western, northern and eastern exposure, and with only single sash. Again, I kept large plant-stands last winter by merely placing iron kettles of hot ashes beneath them. One frequently has

more plants than the conservatory will contain or enjoys them in the windows; in such cases, the means just described prove valuable. The plants kept warm with hot ashes, were never troubled with vermin.

EDITORIAL NOTES.

WINTER CARPET BEDDING.—The Belgian *Horticultural Review* tells us that by a judicious selection of low hardy evergreens, carpet beds are had at Vallbon in the Winter time. It gives the following list of the plants employed:

Euonymus pungens, *Santolina chamaecypariss*, *Thymus citriodorus aureus*, *Sempervivum tectorum*, *Aubrietia deltoidea variegata*, *Ajuga reptans folius pur.*, *Saxifraga denticulata*, *Sempervivum Californicum*, *Sempervivum soboliferum*, *Sempervivum Funki*, *Sempervivum Montanum*, *Sempervivum triste*, *Antennaria tomentosa*, *Bellis perennis aucubaeifolia rubra*, *Pyrethrum aureum*, *Aubrietia deltoidea*. Another bed is made of evergreen herbaceous plants as follows: *Cerastium Biebersteini*, *Sempervivum tectorum*, *Sempervivum soboliferum*, *Sempervivum Californicum*, *Lamium aureum maculatum*, *Ajuga reptans fol. purp.*, *Arenaria caespitosa*, *Bellis perennis aucubaeifolia*, *Sedum dasyphyllum*, *Aubrietia deltoidea*.

WINTER HELIOTROPE.—This is the common name of the Coltsfoot, which it appears is now grown for winter flowers in England.

RED BEET FOR DECORATIVE PURPOSES.—In some situations and arrangements it has been used with good effect as a bedding plant, and it is not less effective when used for the purpose I am about to mention. As a receptacle for bulbs, such as Hyacinths, &c., it is what we might term a living basket, which forms a very curious and interesting object to hang in the conservatory or plant house during the Spring months. This being the usual time at which preparations are being made for the bulb season, the hint may induce some to try the experiment; not that I mean to say it is anything novel, but if successful it cannot fail to please. Select a few well-matured moderate-sized Beet-roots, being careful not to injure the crowns; cut a few inches from the bottom end, leaving say, a little more than one-half; then hollow this bottom end out, leaving just room enough for a little compost or silver sand, and one bulb of a Hyacinth; but do not scoop out more than is need-

ful, that as much nourishment as possible may be left for the crown. To prevent the bulb falling out, place a little green moss close around it, and fasten the whole with some small wire, A handle to this Beet-basket, by which to suspend it, can easily be formed by twining a piece of galvanized wire, fastening the ends in the opposite sides of the Beet. This will also answer as a support for the flower-spike. It will require to be kept constantly moist to induce the Beet-root to send leaves freely from the crown, which faces downwards. The result of this is that the foliage twines gracefully round the sides in an upright direction, shrouding everything from view, the dark leaves being intermixed with the inflorescence of the Hyacinth, which by that time will be in its perfection.

The effect is exceedingly pretty.—C. J. White, *The Gardens, Ferniehurst.*

NEW OR RARE PLANTS.

VARIETIES OF PRIMULA.—The Japan Primrose, *Primula japonica*, introduced some years ago by Mr. Wm. Bull through Mr. Fortune, has hitherto resisted all attempts to break it up into varieties. Now a rosy crimson is figured in the *Belgian Horticultural Review*. Two pretty varieties, one a mottled, of *Primula cortusoides*, are also figured.

VENUS LOOKING GLASS.—This, *Campanula speculum* of old authors, has been produced in Europe with double flowers. It is said they come true from seed.

GREEN HOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

ORCHIDS, WITH OTHER PLANTS. ONCIDIUMS.

BY C. H. S., BALTIMORE, MD.

Among Orchids, *Oncidium*s are probably one of the best for an amateur to try his hand on. Though, as a whole, they have not the beauty or fragrance of many other species, their easy culture, free blooming, and comparative cheapness recommend them strongly to beginners. Yellow, striped, or speckled with light brown or chocolate, are the predominant colors, though there are some noted variations, which I will notice later. Owing to the length of the flower spikes, most *Oncids* show to better advantage grown in hanging baskets, which should be made of red cedar (*Juniperus Virginianus*) or the locust (*Robinia pseud-acacia*). If well made, using strong copper wire, they will last many years. They also give a more natural appearance to the plants, the roots of which will soon attach themselves to the wood. The baskets should be half filled with broken crocks and charcoal, using fresh green moss next to the plants. All Orchids should be set on top of the moss, just inserting the plants deep enough to keep them steady until the roots have penetrated the moss. By having the plants above the

moss, it will be easy to see the young growth, which should never be kept very wet, as they are apt to rot off in their early stage of growth.

Oncids differ in their growth more than any other species of Orchid that I have seen. Some varieties have short corrugated bulbs. Some others have long smooth bulbs, and other varieties, such as *luridum* and *Lanceanum*, have no bulbs, but thick, succulent leaves. Then, again, there is a little group with long terete leaves, and no bulbs, of which *O. junceum* is a noted example. In the shape of the flowers there is great similarity, except *O. Papilio* (the Butterfly Orchid), which many botanists consider a different species, and not a true *Oncid*. I will now give a short description of some that I have bloomed, commencing with the *bulbless group*, having thick, fleshy leaves. I will here remark, that all Orchids with thick fleshy leaves are apt to spot if kept too moist and cold from November to February.

Oncidium Cavendishii. Guatemala, South Mexico; bright thick leaves; blooms in Winter; flower stems from 2 to 4 feet long; flower about 1½ inch diameter; sepals and petals yellow, barred brown lip, bright yellow.

O. bicallosum. Growth like *O. Cavendishii*; flower stem about 15 inches, stiff and upright; sepals and petals brown, lip yellow; blooms in Winter; Guatemala.

O. stramineum. Like *O. bicallosum* in every way except the blooms are nearly all yellow; Mexico.

O. intermedium. Cuba; blooms in Winter; leaves longer and darker than *O. Cavendishii*; very beautiful and graceful; flower stems from 2 to 5 feet long, blooming on short lateral branches the whole length; color rich chocolate and yellow, spotted on lip and sepals. In some the yellow predominates, in others the chocolate. Flowers 1½ inches in diameter. I had over 400 blooms open at one time on one plant, and think I wil' have full as many this winter. This plant is scarce in collections, but it should not be, as it is very easily procured near Havana.

O. luridum and *O. luridum guttatum* abounds in all the Caribbean islands, and varies considerably in the marking of the flowers. Blooms in Summer, and requires more heat than the above mentioned varieties. Flowers brown, orange and yellow, with a pink callosity at the base of the column; flower stems often 10 feet long.

O. Carthaginense. Appears to be merely a variety of the *O. luridum*, with olive colored flowers spotted with brown and orange.

O. Lanceanum. When well grown probably the handsomest of the Oncids. From Guiana, and requires a temperature of not less than 70° at any time to grow it finely. Blooms nearly 2 inches in diameter, and closely set on an upright stem from 1 to 2 feet high. Sepals and petals yellow spotted crimson; lip violet; has a fine odor. I bloomed a variety with a nearly white lip. There is no Orchid that has given me more trouble than this. I have bloomed several newly imported plants, but after a year or so they dwindle away. Probably they do not get heat enough in the Winter, which is the hot time at Guiana, where they make two growths in a year, and, I believe, bloom twice. There are several other Oncids with thick leaves and no bulbs, but I believe they are only varieties of the above.

O. juncifolium, *O. Cebolleta*. Under both these names I have received from Europe and Trinidad the same plant, differing only slightly in the marking of the flowers. They have no bulbs, but round, rush-shaped leaves, about 1 foot or 15 inches long, on upright flower stem, about 1½ feet long; small yellow flowers, spotted brown and black. Requires good heat, and grows well on a cocoanut husk with moss.

O. Papilio (the Butterfly Orchid). A native of Panama, and all the sea coast of the Spanish

main, and the island of Trinidad. This has a small dark green bulb, surmounted by a single leaf, beautifully variegated and spotted with reddish brown on a dark green base. Flower stems long and slender. The blooms come out singly, and last about ten days, when another makes its appearance in a week or so, until four or five have bloomed. The same stem will bloom for three or four years, each year from a lower point. Blooms in early Summer, and requires considerable heat. Blooms rich brown, barred and spotted with bright yellow, and are nearly 4 inches in diameter. At a distance would easily be taken for a butterfly. Does well on a piece of cork or cocoanut husk. There are several varieties of this.

O. sphacelatum, *O. Baueri*, *O. altissimum*, and several others from Central America, have light green ribbed bulbs, with long pendant flower stems; flowers profusely. Flowers bright yellow, barred brown in sepals and petals, lip pure yellow, and bloom mostly in early Summer.

O. leucochilum. Mexico and Guatemala. A beautiful Winter bloomer. In growth like *O. sphacelatum*, etc. Flower stem often 6 feet long, blooming the whole length on short laterals. Flowers about 1 inch in diameter, sepals and petals greenish white, with small red dots; lip pure white; slightly scented. Keeps in bloom five or six weeks, and resembles *Odontoglossum* leave.

O. ampliatum. Panama and Costa Rica, has large yellow flowers on a branching stem about 2½ feet long. The back of the flowers has a whitish hue.

O. ornithorhynchum. A dainty little variety from Mexico. Small bulbs and leaves, and blooms in the Winter. The flowers are small, rosy lilac, with a yellow spot in the center. They are delightfully fragrant. Does best in a cool house.

O. Barkeri. Mexico. This often is sold as *O. tigrinum*, but I think erroneously. I see in the Messrs. Veitch's catalogues that they claim them to be different, though coming from the same locality. *O. Barkeri*, true, has a ribbed bulb, and is somewhat stronger in growth than the *O. tigrinum*. It blooms in the Winter. Mine will be in bloom in February or March. It is a remarkably handsome Orchid. The petals and sepals are rather small, yellow barred brown, lip 1½ inches in diameter, bright yellow. This also does in a cool house.

O. tigrinum. I received this from Mexico. It has smooth bulbs, but looks much like *Barkeri*. Mine bloomed in the Fall. Sepals and petals light orange yellow; lip quite light yellow.

O. crispum. From Rio de Janeiro. Has short dark bulbs, and dark green foliage. Flower stems two to three feet long. The flowers are from 2 to 2½ inches diameter; coppery red color, with bright yellow markings on the center of the lip. There are several varieties of this beautiful *Oncid*. Blooms with me in the fall.

O. divaricatum. I have received from Rio de Janeiro several very different plants under this name. I have one in bloom now, with long flexible flower stems about two feet long. Flowers over an inch long; yellow and brown. I have several other plants identical nearly in growth and flowers, but they always bloom in the Summer.

O. flexuosum. A very common *Orchid* from Brazil. Bulbs smooth and green, about 2½ inches long. It is a very free bloomer, covering itself with sprays of small delicate yellow flowers in the Spring.

O. phymatoclalum. Brazil. A rare *Orchid*, with round dark bulbs, and one stiff reddish green leaf. Blooms in the Spring, and has flowers on a long slender stem. Yellow and reddish brown in the sepals and petals; lip white. If kept in a dry place, will remain in bloom six weeks.

O. roseum, or *O. Henchmanni*. A remarkably beautiful and distinct variety from Honduras and the warm parts of Central American coast. It is in growth like a small *O. luridum*. The flowers are rosy white, spotted dark rose and crimson, and are borne on long flexuose stems. Blooms in Summer. There are several varieties.

O. aurosum. Peru. Blooms in the Spring. Has a growth like *O. sphacelatum*. The flower spike is long and branching; flowers very profusely; rich yellow, blotched with cinnamon brown on the sepals and petals. Cool culture.

O. sarcodes. One of the handsomest *Oncids* grown, when true. I have sent to Belgium and Brazil for this, but have never been able to get it true. I have *O. amictum*, with dark green bulbs about 5 inches long, and beautiful large yellow and brown flowers. It is a near relation to *O. sarcodes*. There are several *Oncids* from Brazil, of inferior bloom, that resemble *sarcodes* in growth. Mr. Buchanan told me that he sometimes thought that *O. sarcodes* was either

remarkably scarce, or there was no such plant. He had made importations very often from Brazil direct, but had never yet got the true plant.

These are only a few of the many varieties of *Oncids*. Lately some elegant additions have been made: *O. macranthum*, *O. Rogersii*, *O. splendidum*, *O. phalenopsis*, and *O. seriatum*. These are yet comparatively scarce and costly, and I have not seen them in bloom.

CULTIVATION OF THE VERBENA.

BY JAMES H. MARKEY, JERSEY CITY HEIGHTS, N. J.

I much doubt if there is another plant in cultivation so widely spoken of as the *Verbena*, yet there are but few who thoroughly understand the nature of this plant. Some gardeners attempt to grow it at a temperature ranging from 40° to 45°, which is entirely too cold; others think they can grow the same plant in the greenhouse where there are *Dracena*, *Palms*, *Crotons*, &c., at a temperature ranging from 70° to 75°, which is entirely too warm. My experience with the *Verbena* for the past fifteen years induces me to write as follows: I would make the starting point the first of March, at that date taking cuttings from clean, healthy plants; see that they are in a proper condition. If the stock plants were growing in a temperature ranging from 55° to 60°, which in my opinion is the proper temperature to grow the *Verbena*, cutting of such plants would be just the style required by cutting them off at or below the third joint. They would root in eight or ten days sufficiently to be potted off in two and a half inch pots, and will make fine, healthy plants by the first of April. At that date they require to be transferred into three-inch pots, at the same time pinching the tops of each plant; it will cause them to strike out with greater vigor, and enable them to become fine, thrifty plants to be set out in the open ground by the first of May. By the middle of August they will have spread to a distance of three feet; at that date they are covered with flowers and seed pods. This profuse flowering and seeding somewhat lessens the vitality of the plants and puts them in a weak condition; and should they be left in this exhausted state they would very soon receive the disease which so affects this plant, known as black rust; and now there must be something done to prevent this disease from putting in an appearance, and regain the vitality of the plants. I know of no

better method than to cut back the extremities of the shoots some eight inches, and loosen the soil around the plants and in between each layer, by means of a pointed stick or iron. Then adding one gallon of manure water to each plant once a week. Should this liquid be inconvenient, guano would answer the same purpose by adding one pound and a half to twenty gallons of water. This mixture will be sufficiently strong for a single watering each week, and continue this operation until the plants produce a clean and healthy growth, which by the middle of October will give just the style of cutting that is required. Now the propagation begins. I may here state that great importance is attached to the necessity of taking off the cuttings immediately after rain, as the moist weather refreshes the young growth and puts them in a proper condition to be taken off at, or below, the third joint. Cuttings should be potted immediately on being rooted, not allowing the roots to become larger than a half inch. On potting the cuttings they are placed in the greenhouse and shaded for three or four days, or as long as the condition of the weather may require. As soon as they have struck root in the soil of the pots, they should be sprinkled with sulphur water by adding one pound to ten gallons of water; one watering each week will be sufficient to keep them clean and healthy; fumigate with tobacco two or three times each week, and there is no doubt whatever of having a healthy and vigorous stock; provided proper attention has been given to temperature, watering and fumigation by tobacco.

CINERARIAS.

BY F., BOSTON, MASS.

At p. 234 of the August 1877 MONTHLY, I referred to the excellence of the Cinerarias grown by my neighbor, Mr. Paterson, of Oakley, Watertown, and now (Feb. 11) I send you a few blossoms from the Oakley greenhouses. Their chief merits consist in the size, beauty and purity of coloring of the blossoms, and the massive proportions of the plants, points gained and maintained by a careful selection of home-saved seed and good cultivation. No attempt is made at the florist's nicety of perfection in blossom, Mr. P.'s end being to have fine specimens for conservatory decoration and for furnishing cut flowers to have each plant bear a great wealth of large and brilliant blossoms, and

this purpose he certainly has attained. Mr. P. neither exhibits nor sells plants or seeds, therefore those who wish to see them should see them at Oakley, where Calceolarias, Cyclamens, Primroses, Azaleas and other flowering and greenhouse and stove plants are cultivated with equal success, and a more civil, cordial, and generous-minded person than Mr. P. you will seldom meet.

Among the blossoms sent I have numbered a few, so that you may specially notice them. No. 1 is $2\frac{1}{2}$ in. across; No. 2, $2\frac{1}{4}$ in. and almost semi-double; No. 3, $2\frac{1}{2}$ in.; No. 4, $2\frac{1}{4}$ in., and of a glowing, purplish violet; and No. 5 over $2\frac{1}{4}$ in. and goodly florist's flowers.

Mr. Paterson saves his seed from the finest flowered plants and sows it about the end of June, in pans of fine, light soil in a cold frame—one of the spent Spring beds. As soon as the seedlings are fit to handle he pricks them off into other pans, and when they grow a little, pots them singly, and afterwards re-pots them two or three times just as they demand it. He makes it a point never to allow his Cinerarias to become pot-bound before they are shifted, or show flower-buds before they receive their final potting, which is usually in late October or November, and sometimes a few in mid-winter, when they will be in from seven to ten inch pots. From the time they are sown up till November, or as late as frost can well be excluded from frames by means of a straw mat over the sashes, the Cinerarias are grown in cold frames. Just before hard frosts are likely to occur, however, they are transposed from the frames to the graperies, where, on elevated table-like benches, they are wintered with a minimum temperature of 38° .

While in the frames they are roomily arranged, kept near the glass, abundantly watered at the root and overhead, and kept as cool as practicable by a little whitewash shading on the sashes, and liberal ventilation. In the graperies they are treated to generous libations and almost daily sprinklings, and when it is evident that the pots are filled with roots and the flower-buds are being formed, a little liquid manure is given, until the flowers open, when its application is discontinued. The first appearance of flower buds, too, is pinched out, in order to secure a wider and more compact head.

The most forward of the Cinerarias are placed in a division of the grapery where the minimum temperature is 40° to 44° , and are consequently rushed earlier into blossom than those wintered

in cooler quarters. In this way a succession of well-flowered plants is maintained from the end of January until up into April. A high temperature curls and weakens the foliage and therefore is avoided, and green-fly, so persistent an enemy to these plants, is, by frequent doses of cold tobacco-smoke, denied an existence.

Grown as above, these plants in eight and nine inch pots are now (Feb. 11) perfect massive specimens from two feet to three and one-fourth feet through, with large, succulent, deep green leaves and wide-spread but dense heads of flower buds. The more advanced are in blossom and arranged in the conservatory, and another large succession will yet be obtained from the warmest grapery; those in the latest grapery are not much more than showing flower buds.

[The flowers were very fine and created much attention at the rooms of the Germantown Horticultural Society, where they were exhibited.—ED. G. M.]

EDITORIAL NOTES.

VINES FOR A BAY WINDOW.—Mr. W. T. Bell in the *Tenango Spectator* gives the following as his choice:

Abutilon vexillarium and *A. vexillarium pictum*; shrubby plants, to be trained as climbers, flowering freely, and the latter having leaves variegated with yellow.

Ampelopsis Veitchii, a woody climber from Japan, somewhat similar to our Virginia Creeper.

Cobaea scandens, a rapid grower, clinging by tendrils, and having large bell-shaped flowers. There is also a variegated-leaved variety of the same. Ivy—English, and other woody kinds; also, what is commonly known as German or Parlor Ivy, a fast-growing herbaceous plant.

Lygodium scandens, a climbing fern, of great beauty, introduced from Japan.

Myrsiphillum, or Smilax, one of the most beautiful climbers in cultivation. While the plant is in active growth the soil about its roots should never be allowed to become very dry.

Senecio macroglossum, Cape Ivy, one of the very best rapid-growing climbers, similar in habit to the German Ivy, but with thick, glossy leaves, and much superior to it.

Drooping or creeping plants:

Fuchsia procumbens, a new and distinct species, a real trailer.

Geraniums, Ivy-leaved.

Lobelia, flowers bright blue.

Lycopodiums, moss-like plants, in great variety; suitable for carpeting.

Lysimachia, or Moneywort, flowers yellow.

Othonna crassifolia, a pretty little plant, with cylindrical, fleshy leaves and yellow flowers.

Polygonum scandens.

Saxifraga sarmentosa, a common plant, increasing by sarments, or runners, like the strawberry.

Tradescantia, or Wandering Jew; several varieties.

Vinca, or Periwinkle; vines grow several feet in length, some of the varieties having variegated leaves.

Other suitable plants:

Abutilon, *Boule de Neige*, with white bell-shaped flowers; and *P. Thompsonii*, leaves variegated with yellow.

Achyranthus, plants with red foliage.

Agave, or Century Plant.

Azaleas, shrubby plants, flowering in early Spring.

Calla Ethiopica.

Camellias—Carnations—*Centaureas*, plants with downy, white foliage.

Echeverias—*Farfugium*—leaves spotted with yellow.

Ferns in variety—*Fuchsias*, *Geraniums*,—*Hyacinths*—*Jessamines*—*Myrtle*—*Oleanders*, *Palms*, of certain kinds, *Pelargoniums*—*Chinese Primrose*—*Roses*—*Solanums*, &c.

COAL OIL LAMPS FOR SMALL WINDOW CABINETS.—The *Journal of Horticulture* says:

"An amateur, writing to us on paraffin lamps for excluding frost, states that he has employed one for three years in his small greenhouse with great satisfaction and he would not hesitate if required to place a smaller lamp in a frame. He describes the reservoir of the lamp, which is of block tin, as resembling an inverted soup plate. This forms the base and supports a moveable cylinder a little more than a foot high, and six inches in diameter, with an aperture at the bottom for the burner to pass through, and an ornamental lid at the top with apertures for the escape of heat. After the heat has been turned 'full on' for a quarter of an hour the cylinder becomes quite hot, and is afterwards kept sufficiently so by a very small flame. If he 'fires hard in severe weather' he places a shallow tin dish of water on the top in place of the lid. No injury whatever has resulted from

the lamp, but on the contrary he has "two hundred Geraniums which have been preserved through the present Winter at the cost of one gallon of oil."

LEAF PLANTS FOR ROOM DECORATION.—Among the plants which can be used with beau-

the open border in our climate, and can be taken up in September and potted for Winter work. Of late years there have been many new species introduced, of which one of the prettiest, *C. Normanbyana*, introduced by Mr. Bull, of Chelsea, we give with this. There is an ad-



CYCAS NORMANBYANA.

tiful effect in room decoration are those known as Sago Palms, of which the most common form is, perhaps, *C. revoluta*, and which indeed is now tolerably well known. They grow very well in

vantage in these not possessed by some other plants. The older they are the more valuable. We have seen old Sago Palms sell for \$100 at public sale.

TUBEROUS BEGONIAS AS BEDDERS.—A correspondent in the February London *Journal of Horticulture* says:

"The great merits of these plants are as bedders. In my estimation they are more beautiful than Zonal Pelargoniums and more enduring. Pelargoniums when at their best have every particle of beauty washed away by a few days of wet weather. Not so Begonias; they revel in moisture like all sub-alpines—percolating moisture secured by thorough drainage. Those, therefore, intending their culture (and it will become general) will do well to provide thorough drainage and a sheltered situation, as the plants being succulent cannot stand twisting currents of air and cold positions. They prefer a vegetable soil, and do well in the wide interstices of rock-work holding a goodly amount of compost, in which they may remain permanently, having a mulch over them in Winter of cocoa-nut fibre refuse 3 or 4 inches thick.

For Summer bedding pot the corms in March, plunging the pots in ashes in a cold frame, keeping close and protecting from frost until growth takes place, then admit air moderately, sprinkling overhead in the afternoon of bright days, closing early. By the middle of June they will be in good growth, and being hardened off should then be planted out. In cold localities I advise their being planted in borders along the sides of plant houses with a south exposure, in which with a covering of cocoa-nut fibre refuse three inches thick they will no doubt prove hardy. In wet and cold soils the roots may be lifted after the first frost, and be laid in a shed for a few days to dry, and having most of the soil removed be stored away like Dahlia tubers in sand in a cool place safe from frost, where they may remain until potting time in Spring. But an amateur tells me all this 'potting and bother' is quite unnecessary, as the Begonias

only require the treatment he gives his Dahlias—viz., planting the roots in April three inches deep, inverting a flower pot over them until the growth cracks the soil, then removing the flower pots every fine day and night, covering the plants only when there are signs of frost, and 'you know I have the best display of flowers of those plants until frost of anybody hereabouts.'"

NEW OR RARE PLANTS.

NEW REGAL PELARGONIUM, MRS. JOHN SAUL.—Mr. John Saul has issued a plate of this variety, which originated in his own establishment. The writer of this had the opportunity of seeing the best of the new ones, in the leading establishments of England, last year—some of which are not sent out yet—and he can say that Mr. John Saul's is equal to the best of any of these prospective new ones.

SCRAPS AND QUERIES.

GROWING EPIPHYLLUM TRUNCATUM.—E. B. C., Winona, Ohio, says: "Will the editor of the MONTHLY please give the method of growing *Epiphyllum truncatum* and vars, so as to induce them to bloom. I have plants one year from cutting, on their own roots, which, as yet show no indications of flowering, although they have made good growth. What season of the year is best to propagate so as to induce them to flower about New Year's, and what method of treatment would bring about this? Perhaps some of the correspondents of the MONTHLY, for instance, J. Taplin, could write an article, giving detail wanted. I understand James Taplin has been very successful with these plants, is why I instance him.

FRUIT AND VEGETABLE GARDENING.

COMMUNICATIONS.

NOTES ON RASPBERRIES.

BY J. A. D., ST. JOSEPH, MICH.

In the February number of 1877 is a statement from the *Country Gentleman*, that the Wilson's Early Blackberry is not hardy much farther

north than Philadelphia; and your statement that you supposed it as hardy as the Lawton. The Wilson's Early Blackberry is about as hardy here as the Lawton; but both are killed about every other winter. The Lawton may be a little hardier, but generally, when standing side by side, the canes of the Lawton have been killed whenever the Wilson Early has been destroyed.

I notice also an inquiry from a subscriber here, about the Highland Hardy Raspberry, asking whether it is an old berry with a new name. A gentleman near here, who cultivates the Highland Hardy and Kirtland, declares that there is no difference between them. As he procured his plants of Highland Hardy from Rev. E. P. Roe, on the Hudson, I presume they are genuine. I have not seen this gentleman's plantation, but saw the Highland Hardy in fruit last summer, and compared it with the Kirtland, and think there is a difference. The large berries of the Highland Hardy are somewhat conical, while the Kirtland is always round. It has been claimed, too, that the Highland Hardy is identical with the Elm City. I have never seen the Elm City, but as William Parry, of Cinnaminson, N. J., has cultivated all three without discovering their identity, I am inclined to think they are distinct. One fruit grower here has ploughed up his Highland Hardy plantation after three years' experience with them. He said that he could not make them produce vigorous canes. I presume the foliage failed during summer. There is one thing remarkable in connection with this berry, and that is that the party who could furnish evidence of its producing a thousand dollars per acre, had plants for sale at \$4 per thousand, a lower price than any berry plants—old or new—are offered.

LIME FOR APPLE ORCHARDS

BY MR. J. BLACKWELL, TITUSVILLE, N. J.

We have used lime on our apple orchards for a number of years, and consider it beneficial in moderate quantities, say twenty bushels to the acre. We have an old orchard that has borne heavy crops for several years, that we have limed with good results.

THE CHENANGO STRAWBERRY APPLE.

BY MR. J. BLACKWELL, TITUSVILLE, N. J.

I have fruited this apple on two trees, one a seedling tree grafted at the crown with the Chenango, the other top grafted on a young tree. Both have borne three or four years. Fruit of good size. Tree an early and profuse bearer. Fruit rots before ripening, and must be gathered before it colors, as it specks before it ripens. Not worth cultivating where there are so many better apples.

AILANTHUS AND ROSE BUGS.

BY MRS. R. B. H., WILMINGTON, DEL.

Rev. W. H. W., of Reading, Mass., complains that the crop of grapes, "in some cases at least, are sadly diminished by the unprecedented number of rose-bugs." Now that gives me an opportunity once more to speak a word for the Ailanthus. Some years ago in passing under an Ailanthus, I observed a great number of rose-bugs under it. Some apparently dead, others helpless and not able to fly, while many were trying to creep up the body of the tree and surrounding shrubbery. I mentioned it to my husband (who was an invalid), and he said he had observed it before, that he thought the flowers of the tree had attracted and then sickened them; and that as a proof that instinct does not always guard from mistakes, he had observed that the young robins would alight on the Alder Buckthorn (*Frangula Caroliniana*) and eat the berries until they were very sick. By-the-by, that same *Frangula* was a very handsome tree, twelve or fifteen feet high, with beautiful glossy foliage, and berries first turning red and then a shining black. It was thought worthy of being photographed. But again, the Ailanthus—has any one observed a diminution of rose-bugs in its neighborhood? We had very few in after years. Perhaps they come periodically.

PEAR CULTURE.

BY A. C. FOWLER, PANHANDLE, W. VA.

I will now fulfill my promise. My pear trees are looking finely, have lost but three out of about two thousand by blight, while trees generally in this section suffered greatly. I think I have hit upon a preventative for blight. It is this: In June I wash my trees with a wash made of one pint of soft soap to one gallon of water, or take good strong lye and wash the trunks of the trees and larger branches. Applying this to the trees keeps them in good healthy condition. My trees are six years old, and have been mulched for two years and cut back, but no cultivation. I have been using this wash for three years, and have lost but very few trees while before using, I lost near two hundred in one season.

[Accumulating facts tend to show that the spores of the Fire Blight fungus develop from the outside, and give increasing weight to the judgment of those who believe that washes will destroy these spores.—ED. G. M.]

CRACKING OF THE PEAR.

BY P. H. FOSTER, BABYLON, L. I.

I see in the Feb. MONTHLY, page 52, your Notes on the cracking of the Pear; you claim it is clear to all who have given close observation to the subject, that there are several, if not many causes; as much as to say we are all groping in the dark. I have never as yet learned of a remedy from our men of superior wisdom; but hold they do not see the exact process in which the fungus is conveyed to the fruit. I am fully satisfied from the experiments I have made, the disease can be exterminated. In order to test my theory, an isolated specimen should be selected which is bearing cracked fruit, all the last summer's growth or wood taken off except a few blossom buds. I hold the fungus after being established on a tree, is perpetuated on that tree, by its propagation on the young wood and fruit: there is no doubt a difference in the susceptibility of fruits, in taking on this condition; but close observation will disclose the fact, that the young wood of all varieties of Pear trees do not present the same appearance. Some contain an unbroken cist wherein the fungus lies; in others the cist has opened the fall before, and become harmless. I will give you an extract of a letter to F. W., Feb. 18, 1874: Dear Sir:—"I find the wood on the Lawrence Pear least infected by fungus; Duchess, Bartlett, Belle Lucrative, very slightly; Beurre Diel, Flemish Beauty, and White Doyenne most. The above observations are pointed. To one year old wood, it should appear a thick skinned pear may resist the injury done in a measure; think the living principle of fungi on some varieties remains enclosed in the cist during the winter, and does not open until spring when new growth commences, while in other varieties the cist opens the latter part of the same season of fungus propagation, and thereby becomes harmless. It would be well to look for the living spore or seed and ascertain the point."

CELESTIA APPLES.

BY R. J. BLACK, BREMEN, OHIO.

There is plenty of room above, as was said to the youth who thought a certain occupation too crowded; so with fruit. So the catalogue is full to overflowing, yet there is plenty of room for the finest productions.

Dr. L. S. Mote has placed every lover of fine fruit under lasting obligations by originating this

delicious apple. It certainly merits all the good things Dr. Warder has said of it. When first brought to notice by him, he wrote that it "perhaps excels the famous Dyer or Pomme Royale;" but after a number of years' experience there is no room for doubt. It "excels" the latter in all particulars: growth, bearing, size, beauty and quality. Grown in the same orchards with such fine varieties as Early Joe, Champlain, Garden Royal, Richard's Graft, Fall Pippin, Ohio Nonpareil, Sparks, Evening Party, Grimes, Golden, &c. What the Cincinnati Horticultural Society said of Ohio Nonpareil 20 years ago may more emphatically be said of Celestia: better than the best. The tree is a fine, upright stocky grower; shoots rather short-jointed, dull reddish-brown with considerable light-grayish marking, somewhat downy and spotted; buds prominent, pointed; leaves dark-green, thick, ovate, acuminate, irregularly crenate. One of the most beautiful and healthy trees in all stages of growth, and an excellent bearer. To describe the fine quality of the large beautiful yellow fruit, is not easy; but Dr. Warder comes as near it as words will allow: "Flesh yellow, very fine grained, very tender, juicy; flavor sub-acid, sprightly, aromatic, delicious. Use, table or kitchen; season, September; quality, very best."—(*American Horticultural Annual*, 1867, page 63.)

Its one fault is that it does not keep till April. But in higher latitudes this will not be against it, for it is well known that Cogswell and other apples which keep well in the North, are ripe and gone in Southern Ohio, before the first of November. Here, about one degree north of the place of its origin, Celestia ripens in October, being a month later; and with no particular care keeps sound and perfect until after Christmas.

EDITORIAL NOTES.

FRUIT CULTURE IN TEXAS.—Professor S. B. Buckley says that the apple does not succeed well in the warmer parts of Texas, unless "Southern varieties from Southern nurseries" are planted. The blight, which it seems now to be proved is caused by a minute fungus, kills thousands of trees in the State. On his grounds at Austin few have died. There are old trees at El Paso nine feet in circumference three feet from the ground. They were planted by the Spaniards a hundred years ago. Dr. Buckley thinks they are the largest pear trees in

the United States; but we doubt this. Peaches are at home in Texas. Quinces promising. Plums, only the native selections do well. Cherries, currants, and gooseberries do not do well. The grape, we gather from his remarks, is not very successful. The fig does well in Middle and Southern Texas. Oranges only in the counties bordering on the Gulf. Blackberries do well. Raspberries, only the Black Caps. Strawberries very well. Prof. Buckley thinks that a little more fruit in addition to the present abundant "hog and possum" would do the Texan farmer no harm.

THE AMERICAN VINES IN FRANCE.—The French vines grafted on the Clinton, at Montpellier, introduced at once on the report of Prof. Planchon's mission to this country has proved completely Phylloxera-proof. Has any one tried the same experiment in our country? It is likely fair success would follow the European grape on a native stock in the open air of Eastern America. It would be worth an experiment.

COFFEE IN AMERICA.—The *Scientific Farmer* having announced that "coffee has proved very productive in California since its introduction four years ago, Mr. W. Saunders offers ten dollars for a pound of the berries from plants that have been three years in the open air of any part of the United States. He does not want the Kentucky coffee, Rye coffee, or any coffee but the genuine Arab berry.

PROFIT OF GRAPE GROWING.—Mr. E. F. Ellwanger makes the good point, that those who find grape growing "don't pay," are generally those who have gone into it from some other business, and who thought plants ought to "grow into money while they slept." Honest profit means honest labor; no work no pay, is nature's law in gardening. Mr. Ellwanger thinks that the man who first loves his trade and then sticks to it, generally works out fairly at least, and we quite agree with him.

THE MOST POPULAR PEARS IN FRANCE.—It is said that about one-seventh of all the pear trees sold in France are of the one we know as Bartlett, and the Duchess.

SERVICE BERRIES.—The Californians "prove all things." Now according to the *Independent* of Stockton, Mr. Milco has introduced "Sorbula" trees from which much is expected. This is no

doubt the service berry, *Sorbus domestica*. "Blessed are they who do not expect much, for they shall not be disappointed."

NEW OR RARE FRUITS,

BREWINGTON PIPPIN APPLE.—Mr. Charles Downing kindly sends us a specimen of this apple. Mr. D. says: "The apple is of good size, showy, and the quality good, although a little wanting in juice. It will no doubt be valuable for the locality where it originated as a late keeper and for market." We agree with Mr. Downing. It is an improvement on Ben Davis, and that in itself is a great gain. Mr. Brewington, of Prince of Wales, Breckenridge Co., Ky., the raiser, gives the following account of its origin:

"Now, this is to certify that the Brewington Pippin is a seedling of the Joe Allen (New York Pippin—Ben Davis) apple, and produced its first fruit about the year 1871. I grew the tree, and it is now to be found in my orchard, about five miles east of Hardinsburgh, where I reside at this time. It blooms one week later than Ben Davis, and ripens from February to April; if kept in a warm place during early Winter will be in good eating condition by first of January. The tree is of vigorous growth, upright, and becoming spreading as it grows older. Fruit suffered some this season from bitter rot; about fifty apples in all for first time. I believe the late frost caused the rot by a freeze, and then the disease developed itself as the fruit matured. Have had grafts to grow eight feet in length in one season (first year's growth of grafts set by Aaron Norton, who is one of my neighbors), and bore fruit the second year after the grafts were set. You will notice that the bark of these scions are redder than the Ben Davis scions, and this apple is a darker red, more like the bark on the scions of Ben Davis, while the bark of the Brewington Pippin scions is colored more like the Ben Davis apple. I think, on the whole, the Brewington Pippin a finer, showy tree and leaf than the Ben Davis tree, and the apple has more flavor and is a better keeper. I have about thirty young trees of this latter variety set out for a new orchard as late keepers.

"I subscribe myself,

"JAMES BREWINGTON."

SCRAPS AND QUERIES.

LIME FOR ORCHARDS.—N. W. A., Lowell, Mass., writes that in the Vol. of the *Horticulturist* for 1875, page 22, there is an excellent paper on the application of lime to orchards.

UTAH CURRANT.—A correspondent from Michigan enquires if any have had more experience with this east of the Rocky Mountains,

than the provisionally favorable notices that have in times past appeared in the *GARDENER'S MONTHLY*?

FRUIT OF JAPAN PERSIMMON.—Mr. Loomis sends us a preserved fruit from Japan. It has a flavor partaking of the fig and the date when dried. The one sent was perhaps the kind known in Japan as Yamato. It has small seeds. We believe it will be hardy anywhere that the common Virginian Persimmon will stand the Winter.

FORESTRY.

COMMUNICATIONS.

WILLOW OAK.

BY S., RUTGERS COLLEGE, NEW BRUNSWICK, N. J.

In your March number J. M. says "it would be interesting to know the farthest Northern point that Willow Oak (*Quercus Phellos*) has been found growing wild. For the information of your correspondent and readers, I may state that this oak is common near Washington, Middlesex county, N. J. Two trees near that village are each between 60 and 70 feet in height, and nearly 3 feet in diameter. I do not recollect ever seeing this tree elsewhere in the central or northern parts of this State. There are said to be several near Mt. Holly. I think that at each of these localities the tree is limited to a comparatively small area.

Your note on a large cherry tree, page 18, January number, suggests a measurement which I made of a wild cherry tree (*Prunus Pennsylvanica*) growing on the roadside, about a mile south of Warwick, Orange county, N. Y. This tree, three feet above the ground, had a circumference of 17 feet 7 inches. It is one of the largest trees which I have seen in that part of New York, and the adjacent Highlands of New Jersey.

QUERCUS PHELLOS AND Q. FALCATA.

BY HON. ELI K. PRICE, PHILADELPHIA.

To J. M. I answer, that there is a large Willow Oak on the east side of the Woodlands, near the southwest corner of the alms house, and three Spanish Oaks in the Woodlands, two or three hundred yards eastward of the mansion;

one on the north side of Chestnut street, in front of Mr. Keene's house, near Thirty-seventh street; and several in the Park, near the southwest corner of the bridge over Belmont Valley, that is, northeast of Horticultural Hall.

EUCALYPTUS AT NORFOLK, VA.

BY H. P. WORCESTER, NORFOLK, VA.

In connection with your remarks upon the "Hardiness of the Eucalyptus," it may be of interest to you to know what success is met with in this locality.

With slight protection small trees have stood a moderately severe Winter, but *without protection* they have thus far been killed by the first severe frost. I speak of the *E. globulus*. Whether the *E. bicolor* is more hardy or not, I shall be able to determine after a trial I am now making. I might say in this connection that another Australian plant, the *Cassia fistula*, will not stand our Winters, but, when protected, has produced fruit abundantly the second season, in my garden.

EDITORIAL NOTES.

AMERICAN FORESTRY AND HORTICULTURE AT PARIS.—The forestry exhibit from the nurseries of Thomas Meehan, of Germantown, and which went on the "Constitution" with the others from Philadelphia, for the Paris Exhibition, is not included in the recently published Philadelphia list of exhibitors, because at the request of General Le Duc it was transferred from General McCormick's special list in order

to make part of the National exhibit under the auspices of the department of Agriculture. So far as we have heard this is the only American nursery that will be represented there. If there are others we will gladly publish them. The same firm, as already stated, desired to make an exhibit of over eight hundred species and varieties of living trees, but was prevented by the strictness of the French rules.

TREE PLANTING IN MINNESOTA.—S. D. Payne planted 100,000 trees last year, and expects to have 100 acres in all completed this season.

A GOOD MOVE.—The President of the Missouri River, Fort Scott, and Gulf R. R., has made a contract with Messrs. Robert Douglass & Sons, of Waukegan, Illinois, to grow for that road 50,000 Black Walnut, 75,000 Catalpas, and 75,000 Red Cedar seedlings. These trees are to be planted on the company's land, at a point not far from Fort Scott, Kansas.

WOOD OF CERCASUS SEROTINA.—An Illinois correspondent sends us a sketch of a stem of this tree which has made an average growth of three-quarters of an inch a year. The timber ought to be very useful for cabinet work; though we do not think quite equal to the Wild Cherry trees, escapes of the cultivated Cherry which so abound in Pennsylvania. We wish some better name than "Wild Black Cherry" could be given this tree, as it is certain to become confused with these escapes from garden culture.

THE PROFIT OF FORESTRY.—Judging by the following from an English contemporary, they do not calculate profits from the same basis that we do:

"The expenditure upon the Windsor Parks and Woods exceeds the income from them by nearly £20,000, the New Forest yields a profit of £1300, the Forest of Dean one of over £6000, the High Meadows Wood over £4000, Alice Holt over £1000, Woolmer Forest and Bere Wood, Hants, nearly a £1000; Parkhurst Woods, Isle of Wight, yields a profit of £148—the total receipts from the Royal Forests, says the *Journal of Forestry*, being £33,129 0s. 8d., the expenditures £18,519 10s. 2d. Windsor Forest, being entirely exceptional, is not included in the foregoing total. Like our contemporary, we have no doubt that the revenue from the Crown Woods might, in course of time, be very materially increased, while the expenditure on Windsor Forest might

probably be diminished, and the income increased without diminishing the beauty of the forest, the comfort of the Sovereign, or the pleasure of her subjects."

In our country the income over expenditure in any one year would not be considered "profit." We should want to know how much expenditure of capital and labor there had been for years previous; and we should perhaps want to charge six per cent. against all this outlay, that had for so many years brought in nothing, before calculating what the profits were. It seems to us that a full grown forest might yield in one year twenty times the expenditures of that year, and still the forest not to be a very profitable investment.

Forestry will pay,—well managed and rightly located, it will pay handsomely; but here, as in the meteorological aspects of the case, it is best to guard people from planting under misapprehensions. No cause is permanently successful that does not stand on a solid body of facts.

CATALPA TIMBER.—When a few years ago the GARDENER'S MONTHLY called attention to the fact that the Catalpa was one of the most rapid growing trees as well as giving very durable timber, planters were very incredulous. Since then facts have come to light showing it to be even more valuable than we supposed. We take the following from the proceedings of the Mont. Co. (O.) Horticultural Society:

"Prof. F. J. Burrill writes: From the experiments so far at the Illinois Industrial University, the catalpa is one of the cheapest, and easiest to grow, and one of the most rapidly growing of our forest trees, native or introduced. In one plantation, containing about twenty selected species, only the soft maple and white willow have in eight years time surpassed it. It has outgrown the White or American Elm, White Ash, European Larch, Osage Orange, Black Walnut, &c., upon the same ground, and under the same treatment. It is not attacked by any insect, nor does it appear to be subject to any disease whatever. Our trees were raised from seed planted in the spring of 1869, and were transplanted in 1871. When reset the tops were cut to the ground, because they were crooked and much branched, and were set two feet by four feet to induce erect growth, cultivated like corn three years, and plowed once each of the two following years, since which time nothing has been done to them except a very little pruning. Next

spring every other row will be removed and used for stakes in vineyards, fences, &c.

The average height is now sixteen feet three inches, and average diameter one foot from the ground three inches, some much larger. They are as straight and erect as can be desired, and grew in 1877 an average of thirty-three inches.

While collecting specimens of the trees of Illinois for the Centennial I found some boards sawed from a log two feet in diameter which was proven to have laid upon the ground one hundred years. One man had known the log to have thus lain during forty years of this time, and he had the information directly from another as to the previous sixty years. This was in the extreme southern portion of Illinois, about twelve miles from Cairo and the Mississippi river bottoms. The wood is still sound and strong, and susceptible of a fair polish."

SCRAPS AND QUERIES.

HARDINESS OF THE EUCALYPTUS.—H., Philadelphia, sends us an extract from a California paper, showing that a *Eucalyptus globulus* stood in Oregon, and without injury, when the thermometer fell 17° below freezing point, and asks "why it would not do as much in Philadelphia." We are nearly tired of this *Eucalyptus* matter. If people want to plant *Eucalyptus* trees here in the East, we know of no law against it. As our friend, Mr. Price, told us last year, they do not try the experiments at anybody's expense but their own. But if we must answer our correspondent's question we should say, as the child says, "It won't live in Philadelphia at the same temperature as in Oregon, because it won't." Hardiness, as most of our readers know, is not decided by the thermometer.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

OIL FOR FRUIT TREES.

BY MR. STEPHEN S. PRICE, FERN ROCK, NEAR PHILADELPHIA.

I notice with considerable interest a communication on page 83, of the MONTHLY, in reference to the bad effects of the use of linseed oil on Pear trees, and also notice that the editor is disposed to attribute the trouble to "adulterated oils."

Now I have most thoroughly tested this subject, with precisely the same results as E. I. B., and can further advise that when blight sets in after the trees have been well oiled, the death of the entire tree is bound to follow. My last year's experience was very discouraging. Usually, with me, when a tree has become seized with blight, I can arrest its progress by trimming out the diseased parts, which still does very well if the tree has not been oiled; but when it has, no care or attention will save it, and even a slight attack means certain death.

My orchard is planted on a southern slope, well drained, and the trees carefully looked after. But the destroyer still comes, and this last Summer it took Manning's Elizabeth, Clapp's Favorite, Flemish Beauty, Buffum, St. Ghislain, Madelaine, and others, and those I

have remaining look black and ugly. Some of the trees have been done two years.

I feel quite certain the oil is pure, as it came from the most reliable druggist I know of, Robt. Shoemaker & Co. I am now experimenting with oil on Marechal Neil Rose, but can tell better later on.

[This is valuable testimony, and seems to put a solution of the enigma further away than ever. The success of the Mississippi trees under oil is undoubted; and *several hundred* apple and pears on the grounds of the editor of the GARDENER'S MONTHLY were painted with linseed oil from top to bottom, with the very reverse of injurious effects. We have offered our explanation why other people's died, which does not seem wholly satisfactory. We will now ask why these cases should have been so successful.—Ed.]

THE JAPAN PERSIMMON.

BY * PHILADELPHIA.

The illustration and description of the Japan Persimmon, in your March number, reminds me that efforts to obtain satisfactory information from several sources as to the fertility of the plants offered for sale, have failed. If the Japan Persimmon be a true *Diospyros*, it is dioecious—bearing pistillate and staminate flowers on separate trees—hence single specimens may not

produce fruit, though I grant that does not always follow, for I remember a pistillate tree of the *Maclura* which bore fruit abundantly, a staminate tree not being within many miles. The fruit, though apparently perfect, was, however, on examination without seed. If, then, such be the capacity of nature in the Osage Orange, it may be repeated in the Japan Persimmon, though it is not, I think, the case in our native sort. I have a Virginia Persimmon tree of some age which has never borne fruit, and efforts at engrafting it have failed. It is said, I believe, that the Kaki may be readily engrafted on our native stock.

Please, Mr. Editor, as I start the ball, give it a push onward. Information may gather as it rolls.

[If these Japan varieties are to be reproduced by seed, and not by grafting, our correspondent's warning is timely; for, as he says, the flowers are irregular in their sexual character. Many are male plants, having no power to develop anything but stamens. We suppose there are some with imperfect stamens, and which have yet the power of developing imperfectly, without pollen; at least that is our guess at the origin of the seedless fruited kinds; but there are some which are truly hermaphrodite, and individual trees of these will bear fruit anywhere.—Ed.]

EDITORIAL NOTES.

CARNIVOROUS PLANTS.—A Salem, Mass.; correspondent kindly says: "Find an important error, March No., page 87, Ed. Notes, fifth line. Should have been *insects* not *plants*." The worst of it is that the editor cannot put the mistake on the "compositor," for it fell carelessly from his own pen.

LINUM PERENNE.—The pretty blue flax of the Rocky Mountains has hitherto been thought to be the same with the Old World *Linum perenne*. Some of our earlier botanists named it *Linum Lewisii*. In a recent number of *Silliman's Journal* Dr. Asa Gray remarks that it may possibly yet prove to be a distinct species, and to bear this name.

THE AMERICAN POPLARS.—These are in such confusion, that it becomes necessary to go over the whole subject from fresh specimens. Mr. Sereno Watson, of Cambridge, Mass., has undertaken the arduous task. It will serve horti-

culture as well as mere botanical science to help him all we can. Any one who can send fresh cut cutkins, male or female, or good specimens of any sort, of our native kinds to him, will do us all good service.

PEAR BLIGHT.—As we surmised in our last, Prof. Burrill was likely to be misunderstood as he himself explains in the following note. The very careful examination of pear blighted branches by Prof. J. Gibbons Hunt, showing the presence and action of fungi, as already detailed in our pages, could not have escaped Prof. Burrill's attention, and we feel sure that he must have meant to favor that view:

"I send you the article to which you refer in your March number under the title *Fungi and Disease*, page 87. I see your quotation is not far wrong, but reference was made to the species named in the article not being *definitely proved* to be the cause of the death of the limbs. Further, I meant to state that we did not know the mode of action and special effect of any species upon these trees, whether named or not. I have little or no doubt but that the disease is in some way due to fungous parasites. Am continuing the search."

THE PEAR BLIGHT.—This is the most popular topic in the agricultural papers just now. We see no reason for doubting the conclusions of Dr. J. Gibbons Hunt, the accomplished president of the Microscopical Section of the Academy of Natural Sciences, of Philadelphia, who, after a careful microscopical examination of fresh specimens, decided that it was caused by a small fungus working from the outside of the wood inwardly, as we have already detailed in the *GARDENER'S MONTHLY*. Dr. Leighton, of Norfolk, Virginia, has in a measure confirmed these facts, by showing that pear blighted trees had perfectly healthy roots, no fungus about them; so it is not likely fungoid material was carried up in the liquids, and so worked from the interior as they do in the peach yellows.

TAKING OFF POTATO BLOSSOMS.—A certain Dr. Booghe or Boggy, according to the newspapers, increases his "tubercles" *one-fourth*, by pinching off the blossoms as they open. Now four hundred instead of three hundred baskets of Murphies is worth trying for; but others besides this Boggy who have tried it assert it cannot be done. We venture the opinion that this doctor is like some others we wot of, who think out results and then publish them as if they were facts accomplished.

SPECIFIC HEAT IN TREES.—The *Gardener's Chronicle* gives the following sketch of some proceedings in Germany:

"Dr. Bolle recently communicated to the Horticultural Society of Berlin some interesting particulars of the relative hardiness of different trees in Germany. Species of *Carya* which succeed admirably in the Central States of North America suffer from May frosts. *Pterocarya Caucasica* survives, but only on dry soil. The Cedar of Lebanon, although it ascends to the snow region in its native country, is not perfectly hardy, whereas the Deciduous Cypress, *Taxodium distichum*, is not injured. The latter inhabits the Southern States of Northern America, and is one of the few instances of plants which will bear a climate colder than that of the country in which they now exist in a wild state. In his useful *Book of Evergreens* Josiah Hoopes says, 'The Deciduous Cypress, although strictly a Southern tree, thrives admirably in the climate of the Middle States. Its most northern natural limits are the Cypress swamps of Maryland, and the extreme southern part of Delaware.—Throughout every portion of the Southern States this tree is found in the low miasmatic swamps and occasionally very plentifully, especially along the borders of the rivers and larger streams. Indeed, in the Gulf States these Cypress swamps cover thousands of acres, and along the Mississippi river particularly they extend for hundreds of miles.' Like the *Arbovitæ* this tree sheds not only its leaves but also its ultimate branchlets, which may possibly explain its hardiness. The Mexican variety, of which a tree girdling 100 feet is said to exist at Chapultepec, is tender. Dr. Bolle thinks these peculiarities in the constitution of plants are governed by the distribution of heat in the different seasons of the year. One of the members present observed that deciduous shrubs generally withstand frost better than evergreens, because they are at rest in Winter, mentioning as examples *Magnolia glauca* and *Larix Kämpferi*."

It has long been known here that deciduous trees are hardier, and evergreens more tender in America than in Europe, as a general thing. Our hot, dry Summers enable the trees to get rid of their surplus moisture; and, as they have little evaporating surfaces during Winter, what they have they keep. They have no excess to freeze and rupture the cells, and have accumulated heat enough and secreted non-congeala-

ble matter sufficient to prevent the freezing of what it has retained, while the evergreen is all the Winter long exposed to evaporating influences which dry out the moisture to an extent utterly unknown to the moist atmosphere of Europe, where people say deciduous trees are "at rest" in Winter, as compared with evergreens. It is hard to tell what is really meant.

INTERNAL HEAT OF PLANTS.—In France they are troubled much by May frosts in the vineyards. An article has recently appeared in the *Annales des Sciences Naturelles* showing that two grape-growers sow the vineyard with rape seed in October, which by May is several feet high. The heat given off by this mass of living vegetation is said to be sufficient to raise the temperature a few degrees, and thus protect the vines from frost. It may also have the effect of shading the ground, and prevent sun warming, thus keeping back growth a little.

SLITTING THE BARK OF TREES.—An impression prevails in some intelligent quarters that the bark of trees never becomes indurated, or "hide-bound," in technical language, unless something is wrong with the roots. It often does result from root injury; but there are many causes, quite independent of this. Nature herself provides for the rupture of bark in the formation of suber cells. It is by their action that "rifts" take place. Every kind of tree has its own species of suber cells engaged in this work, and hence the rifts in no two species are exactly alike. The effect of these growths has been checked in "hide-bound" trees, though often every other part of the tree is in a normal and healthy condition. In these cases the knife aids very acceptably in slitting such bark, the work the suber cells failed to perform.

RIPENING OF FRUITS.—Prof. Albert Prescott contributes to the *Popular Science Monthly* a paper on the chemistry of fruit ripening. The sweetest fruits to the taste may not really have as much sugar as those which taste more sharply. Currants have 6 and gooseberries 7 per cent. of sugar, while a peach and an apricot have little over one per cent. The grape has over 14 per cent.—more than any other fruit. It is generally supposed that sugar is made from starch in ripening, but there are some fruits with sugar in which no trace of starch has ever been found. Moist heat favors the chemical process of fruit ripening, just as unripe fruits are made more edible by boiling.

The whole article will well repay a careful perusal. We are glad to know that the *Popular Science Monthly* is prospering. It deserves the great success it has achieved.

SCRAPS AND QUERIES.

SEEDLESS MOUNTAIN ASH.—Mrs. Lucy Milington writes: "Can you tell me how it happens that the berries of some of our Mountain Ash trees have no seeds? It is only those which the birds spare. All the seeded berries are eaten in the early Fall, so that there is great disappointment as to the decorative qualities of the tree. Please answer this through the MONTHLY, as many people enquire. I only know that there are trees bearing seedless berries, that hang on the trees all Winter, and the trees with full-seeded berries are stripped by birds for the sake of the seeds."

BOTANICAL NAME OF THE SWEET POTATO.—A Virginia correspondent writes: Having failed to find out the botanical name of the Sweet Potato plant, I beg you will have the kindness to state its nativity, or what else you please in your MONTHLY. Though simple, I trust it will interest many of your readers. Am under impression that it is a Calystegia.

[It is *Convolvulus Batatas*, not so very far from a *Calystegia*.—Ed.]

SEEDS OR PLANTS FROM OTHER LOCALITIES.—A., Philadelphia, asks: "Is there any use in a change of seeds from other localities?"

[There may be "use," or there may be loss. If we turn a wheel round, it keeps going awhile after the hand is withdrawn. The same law holds good through all nature. A Peach forced for several years in hot-house will bloom a week or two before a Peach of the same kind fresh brought into the heat; and peculiar forms of plants—new species or varieties—continue to exist long after the circumstances which created them have ceased. Hence, seeds or trees may carry with them to a new location certain characters desirable or undesirable, which will last for a time, though perhaps the same species or variety already there may not have, or may have lost them.—Ed. G. M.]

PINUS ARISTATA.—Mr. Siler, of Ranch, Utah, writes: I send a few cones of *Pinus Balfouriana*. I also send in saeparate bundle limbs of *Pinus Balfouriana*, which I hope will prove very acceptable to you. I would

like for you to present limbs and cones of those I send to the Philadelphia Academy of Natural Sciences. *Pinus Balfouriana* is a low-growing tree, very scrubby, presenting a very beautiful appearance when loaded with cones, as they cause the limbs to hang down, when they look like a cat's tail when angered; hence the local name of Cat Tail Pine. It is found growing on high, dry points of Tricito, where there appears to be no soil, the roots penetrating the crevices of the rock. This Pine I have never found at an altitude lower than 6,000 feet above sea level. It is very local, growing only, as far as I have been able to trace it, about the rim of the basin in Southern Utah, about the head waters of the Sauvro river. It is a solitary tree. You will seldom find two of them growing near together. A peculiarity of the species is its growth. I found a dead tree last August, 18 feet high, 20 inches in diameter 2 feet from the ground. The grain of the wood, instead of running up and down the tree, runs around it, and resemble large hoops driven on a barrel. About 5 feet from the ground there was a swell of at least 2 inches, about 6 inches long up and down the tree. I have noticed several other trees and parts of trees. All bear the same character.

[These were beautiful specimens, with the cones rather more slender than the cones of the *P. aristata* from Colorado, but still not so slender as the form from California, figured by Mr. Murray as *P. Balfouriana*. It is proper here to say that for a long time American botanists believed that the Colorado and California forms were both the same, and were willing to drop their own name and adopt Mr. Murray's by right of priority. Mr. Murray, however, always contended for their distinctness, and the writer of this promised him to investigate the matter further. The result has been so far toward showing that Mr. Murray was right, and we are sorry he is not alive now to receive this acknowledgment. We believe this of Mr. Siler is *P. aristata*, and not *P. Balfouriana*, which is confined to California.—Ed.]

THE NAME IMATOPHYLLUM.—N., Cuyahoga Falls, O., says: "I notice that, in several of our best plant catalogues, the *Amarylloid*, *Imatophyllum* is written, *Imantophyllum*. Loudon says *Imatophyllum*, and this is doubtless right. This name was evidently intended to be descriptive. It is some sort of phyllum (leaf). *Imanto* is not significant, and of course is not descriptive. *Imato* is significant. It means a

coat (vestment). And *Imatophyllum* means a coatleaf. London gives no derivation, and I have no authority for this. But it is certainly not a strained one. For, if you strip off one of the outer leaves, and invert it, you will find more than a fanciful resemblance to the typical swallow-tail coat. Or if not found, in the absence of older or better, the authority of London, I suppose, is sufficient to determine *Imatophyllum* to be the right name.

[Botanists do not always tell the reasons for the names they give the plants. Therefore in matters of orthography, unless they be clearly and manifestly wrong, we take the names just as the author of the botanical name gives it to us. In this case Sprengel gives it *Himantophyllum*, and this we suppose is the oldest orthography. As in the case of *Haplopappus*, and other words; when it got to London the *H* was dropped, and then we read of it as *Imantophyllum*. Hooker we believe to be the first to use it in this form, dropping the *n* also, and making it *Imato-*

phyllum. It is not clear to our mind whether derivation is from *imas*, a leather thong, perhaps from the strap-shaped leather-like leaves, or from *imato*, a vestment, as our correspondent suggests.

At any rate, the name might as well be dropped in general use, as we take *Clivia nobilis*, under the rules, to be the correct name for it.—[ED. G. M.]

DOUBLE AMARYLLIS.—J. D., Bridgeport, Conn., writes: "I send you by post two flowers of a variety of *Amaryllis*, said to be found growing wild near St. Johns, Florida. Will you please let us know through your MONTHLY what you know of the variety, &c."

[As far as we could judge from a flower it appears to be *Amaryllis Johnsoni*. It is not a native of Florida: if wild the original must be an escape from some garden. It is very double, beautiful, and ought to be a valuable florists' flower.—ED. G. M.]

LITERATURE, TRAVELS and PERSONAL NOTES.

COMMUNICATIONS.

HISTORY OF THE WEeping WILLOW.

BY W. H. P.

In your reply to "F," Boston, you say that tradition says that all our Weeping Willows come from a cutting of that one at Napoleon's grave, and you speak of Capt. Jacob Smith as probably the ancestor of a former correspondent. Now it is my custom on receiving your magazine to commence reading it at once, and when I find anything likely to interest our domestic circle, I read it aloud. When the above was thus read a venerable lady of excellent memory, said: "I remember seeing a very large old Weeping Willow, when I lived in Newport, R. I., and it must have been as early as 1812, for our family all left Newport before then, as Mr. Madison's embargo and the war left little for people to do in Newport. Napoleon died in 1821, nine years after, and not long enough ago to make a search for ancestors very difficult." Thank you very much for your European Notes; how they must awake long-slumbering echoes in many wanderers from Albion! Even I, Yankeeified beyond belief, and certain to pass with your friend, the "guard," for an unmitigated "furriner," was so far affected by the little word

"Uckfield," that my eyes involuntarily closed; many, many years were retraced, and among many recollections was one of a secluded pond, with Willows on one side and Pine trees on the other, the cones from the latter giving the boy of six years practical illustrations of the laws of "interference of vibration in elastic media," which have made the study of acoustics and optics pleasanter and easier. The Newport Willow, above mentioned, was in Third street on the "Point," and there may be many who remember it as long ago as the time stated. Your Boston friend "F." can make inquiries around Long Wharf, and the boat builders, when he visits Newport next summer.

[We are much indebted to our correspondent for these notes. In our former remarks the reference was intended to be in regard to the introduction of the Weeping Willow into New England, rather than over the whole country. Weeping Willows were not uncommon as sidewalk trees in Philadelphia, in 1803, and there may be older dates elsewhere.—ED. G. M.]

PLANT PROTECTION.

BY EUGENE GLEN, ROCHESTER, N. Y.

In 1876, Congress enacted a law by which it was made a penal offense, punishable by fine not exceeding \$1,000 or imprisonment

not exceeding two years, to knowingly imitate any registered trade mark or deal in merchandise bearing such imitated marks without authority. Of course, the invoking of criminal law cannot be justified in this case merely as a protection to the private interests of those who hold trade marks, and it was not upon the theory that the law was passed. It was seen that those who acquire a reputation for their goods because of their superiority, have every incentive to preserve their purity, and that if they are protected in the use of their brands the public will have greater security for obtaining good qualities of the merchandise it may require. Hence it becomes a public injury to counterfeit these brands, and for the punishment of this the strong arm of the criminal law may be properly invoked.

Likewise it is a previous public injury to have spurious trees and plants disseminated; and if the protection of the public from spurious brands of coffee and soap, for example, will justify the interposition of the criminal law, how much more will its protection from the yearly increasing damages resulting from the dissemination or spurious trees, plants and seeds, warrant a similar interposition of that law?

As will be readily seen, when a variety has become so generally distributed, that all nurserymen have had an opportunity to obtain genuine stock and propagate liberally from it, the price of specimen trees or plants of that variety will drop to the general average for specimens of that species, and then there will be little inducement to supply spurious specimens of it. Hence if we prevent frauds in the sale of new varieties, we shall put an end to the greater part of the frauds now practiced. The fact that with genuine stock from which to propagate any nurserymen can produce trees of the identical variety produced by another nurseryman, renders it impracticable to effect this reform by means of simple trade marks, indicating by whom the trees to which these marks may have been attached were grown. But a copyright law would give to an originator and his assigns, for a limited term, the exclusive use of the name he might originally adopt to indicate his variety. As this term would cover the entire period of the novelty of a variety, and it is only by the *wrongful use of an established name* that these frauds can be made profitable, the conclusion seems to me irresistible, that a properly guarded copyright law would afford substantial protection against such frauds.

As to the scope of that law I would suggest briefly, that any person who should make oath that he had originated a new and distinct variety of trees, shrubs, vines, plants, bulbs, tubers, seeds or cereals, which had never been disseminated, should, under proper conditions, receive a certificate entitling him to protection in the use of the name he might originally adopt to indicate that variety, for the period now given to authors under the copyright law, with appropriate damages in case of an infringement of his rights.

Provision should be made for declaring void certificates granted on varieties which should prove to have been previously disseminated in any degree, and also for requiring the originator to indicate on all specimens, and in all advertisements of the article, the fact and date of his copyright.

It should further provide that the willful use of a valid copyright name without authority in connection with the advertisement or sale of goods of the species to which the copyright name had been applied, should be a penal offense, punishable by fine or imprisonment, as in case of trade mark violations.

As I have already shown, the property in copyright thus created, if the variety to which it might have been applied was in fact superior, would become valuable; and it may be safely assumed that the self interest of those who hold copyrights upon names, which shall have acquired sufficient reputation to offer any temptation to their fraudulent use, will see that their rights are generally respected, and that the chances of having to surrender the profits of their fraudulent sales and be prosecuted criminally, will deter the great majority of those who now thrive by frauds from continuing the same. These two influences operating together cannot help securing to the public a much larger proportion of genuine stock than it now gets, or fail to give to honest members of the trade a better chance in the race than they now have.

EDITORIAL NOTES.

EUROPEAN NOTES BY THE EDITOR. No. 8.—The public garden at Nottingham is called the "Arboretum," and comprises, perhaps, twenty acres, but the ground is of a more than rolling character, and so well taken have been all the advantages that one might really believe it was double the extent. This, indeed, is the most

striking feature of English landscape gardening and, for the matter of that, French garden art also, to so make the most of ground that a very little goes a great way. The tract was secured by the city in 1850, and all that has been done is wholly the work of art since that time, nature giving nothing but the irregular piece of ground.

It was in a driving rain, and we expected to have a quiet stroll through by ourselves; but I had to learn over again what I had forgotten, that weather like this, the half-normal condition of the English climate, is no bar to the open air enjoyments of an Englishman or woman, and so we found, with umbrellas and overcoats, water-proofs and sensible, thick-soled shoes, some hundreds enjoying the walks through the beautiful grounds. As all the walks were asphalted, there is no difficulty about this to one who does not care for the rain overhead.

The effort to make a small place look large requires great skill in its accomplishment; and I think it is because this effort has been so successful here that this "Arboretum" has such a world-wide reputation; the irregular contour of surface is, of course, very favorable. But not only are the paths varied in width, and led around knolls wherever there might seem no excuse for going any other way, but the whole style of art is one continual change, and even the plants and trees are all of separate characters as we go along. Here, for instance, in a hollow, is a mass of red Colchicum Maples; we follow a winding walk, and there in a sheltered nook come on a sort of Rhododendron garden; passing then around a curve we come on a belt of mixed shrubbery of no special importance, and perhaps really intended to keep from us the knowledge that we are very near some point we went over an hour ago; but in front of this belt of shrubbery, and beyond the stretch of nice green grass, there is a Sweet William garden. Continuing to give way to the enchantment of the walk, we turn again around a knoll and are brought to face with a stretch of Laurels and other evergreens, having in front of them broad belts filled with blooming Hollyhocks, their gay flowers showing to great advantage by the help of the wall of green foliage behind them. Leaving the irregular masses of shrubbery, we are then introduced for a change to a very formal Privet hedge with a narrow border of earth in front, and then a row of our common woolly Mullien, *Verbescum thapsus*, as courtly and severe as the hedge itself, as if each vied with each other as to which should be the most stately in the beholder's eye.

The "Landscape Gardener" that Downing, I believe, once told about, who took a handful of stones, scattered them, and where each one fell stuck in a tree, would find his "art" at a sad discount here, where every yard is a new surprise.

From these curvy walks and continued succession of floral changes, we come suddenly into the "Bell Garden," a square and level piece of ground, full of architectural objects, geometrical lines, and carpet beds gay with bright colors to match.

The bell is a war trophy taken by a Nottingham regiment from Hong Kong in 1857. The tower which supports it is a beautiful piece of architecture. It stands on a broad square plateau, reached on all four sides by flights of stone steps. On the four corners of the square platform are four cannon taken from Sebastapol in the Crimean war. This war trophy seemed to give a reason for the broad plateau, and the numerous pretty beds of leaf plants and flowers spoke as if they were the decorations in honor of the victories gained by English arms. It is this fitness of things, this appropriateness, this deference to the ideal, that is the chief charm of these successful pieces of English landscape gardening. Then there are terraces from which we look down on smooth gardens with bedding plants, the sunken places not looking as if they were the remains of some old canal, the grave of which had been florally decorated by some sympathetic hand, but the space so cut out as if it could not help being just what it was, and we should rather wonder if we saw it in any other way. Then there are nice seats and arbors where you can sit and enjoy each particular scene, and see it so well from nowhere else. Now it is some beautiful public buildings in the city, appearing as if it was built expressly for you to admire from that spot. Then it may be some scene in the distant Sherwood Forest; or, perhaps, a mass of flower beds, water fowl and lake, parade ground or some other nice little bit on its own ground. The points which struck me in the beautiful garden as being particularly worthy of note were that it was admirably designed in the first place; and in the second, that though the commonest materials were employed in decorations, they were used with such admirable skill that no one would think of them in any other light than as the highest effort of art. It was a cheap day in my English experience, giving one of the best lessons in public gardening I could possibly have.

As we cannot do more than take some types of various classes of garden work, suppose we skip over some hundred miles or more in a south-easterly direction, and spend a day at the celebrated Sydenham palace in Kent. This also is a public garden; but it is owned by a private company, the idea being to do a little gardening for profit as well as just for the pleasure of the thing.

Before I left America I had been kindly furnished with letters of introduction by distinguished Americans in various walks of life, to different English gentlemen; knowing, however, that the acceptance of hospitality and attentions, seriously interferes with the seeing a great deal in a short time by one whose busy life suffers him not to tarry long in one place, I seldom used any except where it was necessary to see some desired point not otherwise attainable. But as the Crystal Palace project is supposed to be a pecuniary failure, I was really anxious to know more about its financial prospect than I could learn by looking about alone. Finding a letter in my wallet to Mr. Thomas Hughes, the President, I

determined to make use of it, as I understood he was on the ground. I was directed to a room as the Secretary's office. At the far end were two or three clerks busy with their pens. It was some time before these gentlemen deigned to take any notice of my inquiry if Mr. Hughes was to be found. One at last came to me hurriedly, and on my repeating the question he replied sharply that he was, but was engaged and could not be seen. Before scarcely finishing his answer he was off, and at his desk again. There was nothing left but to follow him, when I explained that I was from America, and was the bearer of a letter from a friend of Mr. Hughes, and where could he be seen? "You can't see Mr. Hughes now, but you can leave the letter with me, or you can see the Secretary in that room." I walked into that room, found it empty, came back and so reported. "Well, I don't know where he is," was the busy man's reply, and he went on with his pen work. It did not seem to me a matter of supreme importance to see Mr. Hughes. I should probably learn something by ear I could not by eye, but then there was quite enough to keep eye and brain employed without that, so I did not see Mr. Hughes and walked away; and the only reason I mention the circumstance is to say that such incivility is extremely rare in England. I found officials occasionally curt, especially on one occasion at Brighton, but the mention of the word "American" had in every other instance, been a complete passport to polite attention, in many cases to a degree I was quite surprised at.

It was an admirable idea to preserve this building—the first in the inauguration of these wonderful exhibits; and it is to be hoped that the enterprise which has staked so much on the venture will be ultimately successful. The building itself is a sort of a combination of the Main Exhibition Building and Horticultural Hall of our Centennial. Huge Acacias, Myrtles, New Holland Araucarias, with numerous hanging baskets of Rose Geraniums, interspersed with dolphin fountains, adorn the main promenade, while the side portions are used for the various collections of art, music halls, &c.

The grounds are pretty; but I must say that, considering the reputation of the landscape gardener, Paxton, I believe, it did not strike me as a first-class specimen of art. In my poor opinion, it was terraced, vased, and fountained to death. The fountains had no water in them, and the lakes were chiefly dark mud and weeds. It may be, perhaps, that it was a bad season for these features; and, indeed, the lawns were as brown and burnt as any I ever saw in our own hot-summered country. There is a huge mound, which, after you reach its crown, you wonder what it was made for, for there is no view from it, and it seems almost incredible that it should have been thrown up for no other purpose than to make a base for the flag pole which surmounts it. Indeed, it seemed to be the weak point in the designing of these grounds, that there was no ideal; it is mere ornamentation with nothing to ornament. This ornamentation, in

itself, was beautiful. The carpet bedding was elaborate and tasteful, and I saw few specimens of such work in England that was its superior. It is worthy of note, that with all our ideas of the superiority of the English climate for gardening, they have but a very short season in which to enjoy it, compared with what we have. It was then the 10th of July, and some of the beds were only being planted. It takes thousands and thousands of plants to carry out the bedding of the English gardeners, because, owing to their short seasons, they have to set the plants very close together, so that, a day or two after the planting, the bed is a complete carpet at once. As they have frosts often in September, they have generally little more than two months to enjoy these beautiful effects.

I must pass by the beauties of Hyde Park, and the numerous public parks of London, and take only one for my brief space to make a few notes on, as I thought it the best of its class—Battersea Park. It is some miles up the Thames from the heart of London, but the steamer takes you for a few pence, and it seems a very cheap ride; but when I remembered our own beautiful river boats, with their numerous comforts and conveniences, I had to remember the lesson I frequently had taught me in my traveling experiences, that Europe was a much cheaper place to live in than America, provided you bought nothing. Of course I knew Battersea of all my old haunts. Although over thirty years ago, I ran my mind through its slimy ditches, and cabbage gardens, and wild grass, and felt sure I could go right to the spot where we botanical boys used to go to get our *Rumex Britannicus*, and other rare (for those parts) species of Docks, for these fields were our favorite hunting grounds. But it was not to be, for all around were beautiful buildings, and a beautiful park was on that very spot. It is perfectly amazing how young old London is. If the author of "Flora Londoniensis" could see it now, he would want to emigrate to the United States. There is scarcely room even for a dock to grow about old London now.

It was, for England, an uncomfortably warm day, though the thermometer was only 70°, and we began to long for some of the pleasant, cooling Summer drinks of our own land. There was a fair looking restaurant at the park entrance, with arbors of living vines, and seats and tables that seemed pleasant enough. People at the tables were indulging in the favorite national beverage, while our eyes caught sight of "Ices" on a piece of pasteboard swirling in the wind. It came in a sort of sherry glass, and in a moment had wholly disappeared. It was a very homœopathic dose for so serious an ailment, so we had to take comfort from a newspaper by us, which gave a terrible account of the awful death of some one a few days before from eating ice cream. It was terrible to think of dying so far away from home, so we asked for glasses of "very cold water," and goblets holding nearly a quart were brought to us. Still it would not go. We had taken nothing which needed an emetic.

so we timidly inquired for ice, and to our great delight some chunks soon floated in the liquid. I cannot describe the curiosity with which we were regarded by those in the vicinity as we sat indulging in that delicious drink; and, relating the, to us, amusing incident a day or two after, while dining with a leading English nurseryman, he assured us that he did not wonder at it, for he did not remember that he had ever tasted ice water in his life!

But we were nicely cooled off, and started for a tour round the park. It seems to have an outline of about two miles, and has much of the continually varying character of the Nottingham arboretum, already described, only with more room; there is, of course, a much greater variation, and these variations of a much more elaborate character. The land is flat and the great work has to be wholly one of art. The ancient ditches, to which we have referred, have been gathered into great lakes, and scores of boats with ladies in them showed that the healthy exercise of rowing was a feminine accomplishment. There were more varieties of American trees here than I had seen anywhere, the Silver Maple especially in considerable quantity, but it does not grow with the vigor it does in our river bottoms at home. Among the specialties of this park were bark basket beds which had painted cable rope for borders; beds wholly of Moss roses, then beds of other roses, forming regular rose gardens; beds of *Zonale geraniums*, in which immense quantities of one kind would be massed; and only imagine a garden in which the tobacco was the leading leaf plant of beauty, while the purple *Senecio* or *Jacobaea* formed a sort of base color between the large tobacco leaves. The sub-tropical garden is a special feature of Battersea Park. To this end palms, tree ferns, Indian rubbers, and similar things in pots and tubs are sunk in the ground for the Summer. It is a principal element in giving the great variety this park possesses, and so far a success. Then there are rock gardens; and of this we must say it seemed the most successful attempt at rock-work we ever saw, and does great credit to its designer, Mr. Pulham. The stones in some places are arranged so as to resemble natural strata, in which effort considerable geological knowledge must have been called into service. Then to make the work look still more natural, across on the opposite side of the wide plain, rocks are arranged in a very similar way, so that the way appears as a gulch through the rock torn up by nature. Then rock-loving bushes and genuine rock plants are introduced among the rocks with little rills and cascades; all so natural and yet so beautiful that you stand and look enraptured, not thinking of it as a work of art, but only wondering why you had not met with so charming a sight in the wild haunts of nature before. I had often heard of the carpet beds and tropical gardening of this park, but never of its wild rock garden, but to me it was the loveliest of all. The carpet beds, to be sure, are exquisitely beautiful. They were real carpets, for the leaf plants are kept down by scissors and shears to

a perfect level, and no color is allowed to intrude a hair's breadth on the line marked out for another. The plants used are all the same as we use for "massing;" for carpet bedding, as understood here, is almost unknown in our land. We have mosaics, but no carpets. I had noted a silvery plant used in these carpet productions not found in our gardening, and desirous to know its name, with the inquiry I handed my card to one of the foremen, as I had found by experience the value of an American card in obtaining kind consideration. After saying the plant was *Leucophyton Brownii*, and looking at the card he observed that one of the honorable Commissioners of the London parks was on the ground, and he was sure he would not be forgiven if he allowed me to go without an introduction. I knew what this meant; and as I had cut out for part of my day's work the use of one of my American letters to James McHenry, Esq., whom I had understood had a model suburban garden, and which I might take as a type of that style of English gardening, it was not without some reluctance that I went with my new found friend and was introduced to Mr. Rogers. On reading my name he treated me with the utmost cordiality, and was kind enough to say there was no one from America whose visit to the park gave him more pleasure than this one of mine with whose writings he had been so long familiar; and there was no help for it, I had to go over the pretty grounds again. And yet I was not sorry, for we cannot do more than learn wherever we are, and I found Mr. Rogers a gentleman remarkably well versed in horticultural taste, and I could not but wish that all park commissions were as ably and intelligently served. From Mr. R. I learned that there are occasionally changes among the personnel of Park Boards as with us, but the Secretary of the Board, and all other officers of Departments are in a measure permanent, and this ensures the carrying out of a uniform plan of management. There is no waste of public funds which follow changes, and no useless officers. There are two hundred acres in the park, and notwithstanding the many varied details, all under one foreman. There are men who have charge of divisions, who were first taken as laborers; these are "advanced men." The number of guards vary with the seasons. At times when thousands throng the park they may be as high as sixty. The lowest number is about sixteen. The plants for bedding purposes are all raised on the grounds. For these purposes there are eight greenhouses, each 20 feet by 100, besides frames. It may give some idea of the immense number of plants required for ornamentation of this character, when I say that in the beds this season there were no less than 75,000 *Lobelias*, and 48,000 *Geraniums*. So great, however, is the national love of gardening among all classes, that whatever feeling there may be against public expenditures, those on parks and public gardens are rarely objected to.

THE BOSTON PUBLIC TREES.—A correspondent writes that in our remarks on trees for

public grounds some injustice might be done. Among articles furnished to the Boston authorities were some for which they paid \$150 per 100. This was a subject for investigation by the city. It is contended that the price was not exorbitant, but was the regular wholesale rates of that grade of plants in this country. It is said that the investigating committee reported substantially to this effect. So far as this particular case may be referred to by our remarks, he thinks that one should be excluded.

THE POST-OFFICE RULER AGAIN.—The Post-office schoolmaster is after Uncle Samuel's bad boys again, and the hands have to be held out for the ruler. Now that our reformed Congress has re-enacted the franking privilege for its members, so that their dirty linen can be sent free through the mails to their laundries at home, horticulturists have to be looked after, and their facilities cut down to the lowest possible ebb. In all large cities a special agent has been appointed, whose duty is to open packages and examine their contents. The smallest package must be "open at the ends," or it is subject to letter postage. It has been hitherto thought to be quite sufficient that the general envelope be open, but now every 5 or 10 cent package of flower seeds must be "open at the ends," as well as the main wrapper; even good Mr. Cresswell's "transparent wrapper" will pass no more now. On making inquiry at the Philadelphia post-office whether, in the case of coarse seeds, bags sewn at the ends roughly, so that the seeds could be examined through the slitches, would do, we were told it would not. The package must be so that "the whole interior can be easily examined."

It is strange that in these days, when a person can send a message by a penny postal card, that a great Government like ours should imagine its "customers" would steal a message through under cover of a package of seeds or cuttings. The whole of these "rules" are insulting to the American people. The fact is, there is no idea that any one will cheat the Government out of a penny postal card in this way. The real intention is to favor the express companies as much as possible, by embarrassing the postage of seeds and cuttings through the mail, and this makes the insulting insinuation that we are all on the alert to rob the Government of a penny message the more unbearable. It will not do, in the face of the liberal postal facilities of other countries, not to *seem* to be as liberal as they are to their people, so our Government can *pretend* to be progressive also, and then so embarrass the working of the law as to make it practically useless.

The express companies have gained a new triumph, and all under the pretence that we will "diddle" the Government out of a penny postal card!

HORTICULTURAL IMPORTATIONS.—Those received into the port of Philadelphia from Europe have not been heavy the past year. Of articles not subject to duty, there were dried

flowers valued at \$1,229; seeds \$11,263, and of dutiable article were bulbs, \$1,547; dried grasses, \$1,607; seeds, \$15,851; trees and plants, \$5,729; of other articles of a more agricultural character on which duties were paid, were \$150,000 worth of potatoes, perhaps from Bermuda in early crops.

WHY GARDENERS SHOULD MARRY.—As noted elsewhere, the "agent" has been trapped and caught by the *GARDENER'S MONTHLY* folks, after he has had, for over a year, the good picking under his "agency" for many other periodicals, seed houses, and nurserymen, and could not be caught. We learn that one gardener near Germantown was saved by the good sense of his wife. He had agreed to get the *GARDENER'S MONTHLY*, "to be weekly, in future, with no increase in price," and the "shears," and he went rejoicing to the house for the \$2 for the gentleman, who politely assured him that "he need not pay the money now until after he got the magazine, if he did not want to; but as he had the receipts at hand it might save trouble to pay at once." But the wife forcibly inquired what he was "after in paying out money to a stranger," which happy thought struck the gardener as sensible, and so "Mr. Waters" was asked to "call again." A wife like that is a treasure to any man, and School Lane, Germantown, should be proud of her. It seems clear that a man who consults his wife before giving money to a bogus agent, has decidedly the best of it, and we recommend the practice to those who have never been visited by Mr. Waters, or C. E. Anderson, or any such man.

DARWIN AND BRYANT.—The portraits of the philosopher and poet, as published, have a striking resemblance to each other.

PROF. RILEY IN EUROPE.—We noticed recently the misconceived criticism of an European author on Prof. Riley's work. We note that they are not all of that gentleman's opinion. Prof. Charles Joly, in *La Science Pour Tous*, ending a review of the work of Prof. Riley relative to *Doryphora*, says: "We do not hesitate to highly commend the labors of a man who is an honor to the learning and intelligence of his country."

TRANSACTIONS OF THE MINNESOTA HORTICULTURAL SOCIETY.—From Prof. Charles Y. Lacy, Secretary, St. Paul. There are few transactions of so truly a horticultural character. The work of the society covers every branch of the art, and the work is done well. Those who think the State can grow nothing but crab apples, will learn better by reading this volume.

DREW'S WINDOW GARDEN.—Our correspondent, Mr. Drew, has written a small pamphlet on Window Gardening, which may be had for 25 cents of Geo. W. Park, Mount Vernon, O.

MR. ROBINSON'S WILD GARDEN.—Of a new edition of this work a recent notice tells us: "Illustrations for a re-written and beautifully illustrated edition of this book are now being

drawn in black and white by some of the best artists in London and Paris. These illustrations will show some of the results already obtained, and suggests what is possible with many types of vegetation. This book is written in the interest of the most charming phase of picturesque gardening, and we should be greatly obliged to any persons interested in such for permission to see any photographs or sketches showing beautiful flower life in a wild or semi-wild state. What is wanted are not portraits of individual flowers, but wreaths, fringes, or colonies of them as they arrange themselves in a wild state, or are permitted to do so in the garden. American readers would also greatly oblige by letting us know if any photographs are obtainable showing flower life in the Northern, Eastern, Western, or Pacific States."

HORTICULTURAL CATALOGUES.—We have several hundreds of catalogues before us, a

large proportion asking "please notice." We would gladly do this if we had four or five pages to spare; for, indeed, the greater part of them are extremely creditable and deserving of all praise.

THE RURAL NEW YORKER.—We do not know that any one should care to have more than his money's worth in a good paper when he subscribes therefor the full subscription price, but if it is to be, the *Rural New Yorker's* offer of a "combined clock and watch," seems about as good as any. We cannot, however, recommend a subscription on this account, for the paper is all any reasonable person ought to expect without it.

THAT BOGUS AGENT.—He has been caught at last, and as we are writing this is in prison, in Philadelphia, awaiting trial, for though he is "such a nice young man," he could get no one to go bail for his appearance.

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

ADDRESS OF MARSHALL P. WILDER.

Concluded.

Pomological Literature.—Among the most important agencies which have contributed largely to the advancement of the pomology of our country, we desire to speak especially of its literature. One hundred years ago this had not begun to exist in our country. Then there was not an agricultural, horticultural or pomological society, not a periodical or paper devoted to the cause of terraculture. When the Philadelphia and the Massachusetts Societies for Promoting Agriculture were formed, our only pomological literature was limited to a small number of European works. These were, as far as possible, collected in the libraries of these societies, and we early trace the beginnings of an American pomological literature in papers contributed to the publications of these same societies. The first of these communications appeared in the Massachusetts Agricultural Repository in 1796, on the natural history of the canker worm. In this paper Prof. Peck gave a very full account of this insect, still so injurious to our apple trees. This attention on the part of agricultural societies to fruit culture has continued and increased to the present day, and I am of the opinion that however much we may be indebted to the State societies and other prominent organizations, we owe much to the unpretending reports of local societies for the interest which now pervades the masses and popularizes pomological knowledge. All of these may be counted in the history and literature of American pomology. Many of these are not only examples of real practical knowledge, but are highly creditable for their literary and scientific character. From these, our own publications have derived much of the information which gives them their excellence,

all combining to make up the literature of American pomology. Only fifty years ago the difficulty of obtaining correct information from our own countrymen in regard to fruit trees and the culture of them, was almost insuperable, and we were compelled to resort to such European authors as we could obtain. But those of the seventeenth and eighteenth centuries, such as Merlet, Quintinye, Duhamel, and the like, were in foreign languages, and not generally available for our uses if we except the "Pomologia" of the Dutch gardener, Herman Knoop, which had been translated. It was not, however, until about the beginning of the present century, even in these countries, that the new enterprise in fruit culture, which characterizes the present age, had sprung up. The publications of Van Mons in Belgium, Forsyth and Knight in England, and Poiteau and Noisette, in France, awakened a new interest in their own and other lands, but it was reserved for a later day, when their successors, George Lindley, Thompson, Rivers and Hogg of England; Esperen, Bivort and Berckmans, of Belgium; Decaisne, Leroy and Mas, of France, and others of our own land, should infuse into the minds of cultivators that new zeal in fruit culture which has now spread throughout our own continent. But it was not until the establishment of horticultural societies in the United States, such as New York, in 1818, the Pennsylvania and Massachusetts, in 1828 and 1829, and the publication of their proceedings, that the glorious era in which we live commenced the development of our wonderful fruit resources. The first strictly pomological work published in America was Cox's "View of the Cultivation of Fruit Trees," which appeared in 1817.

Through foreign correspondence and commercial intercourse, the zeal which had been awakened in Europe soon extended itself to our shores; trees, scions and pomological books of foreign origin, were freely added to our own

collections. Societies were formed, new nurseries established, catalogues published, and a general desire manifested for new and improved fruits.

In this new enterprise, Coxe, of New Jersey; Hosack, Buel, and David Thomas, of New York; Mease, Carr, and Landreth, of Pennsylvania; Lowell, Manning and Downer of Massachusetts; Young, of Kentucky; Smith, of Rhode Island; Ives, and Munson of Connecticut; Corse, of Canada; Hildreth, Longworth, and Kirtland, of Ohio; Corse and Rogers of Maryland; Kenicott and Dunlap, of Illinois, and others—soon became actively engaged.

We have spoken of the early publications of Horticultural Societies, but there is another class of publications to which we are even more indebted. In 1819, appeared the forerunner of the present host of Agricultural papers, the *American Farmer*, which still continues in a green old age, and it is a pleasant coincidence that we meet in the city where this first journal saw the light of day, and whose editor is the Secretary of the society whose hospitality we are now enjoying.

Then came the *New England Farmer*, the *Genesee Farmer*, and the *Albany Cultivator*, through whose columns information began to be widely disseminated. Then came the fruit books and publications of the elder and younger Prince, Thacher, Manning, Kenrick, the Downings, John J. Thomas, Hovey, Barry, Brinckle, Warder, Hooper, Elliot, Field, Fuller and others. Nor should we fail to mention as powerful agents in advancing the cause, *Hovey's Magazine of Horticulture*, the *Horticulturist*, the *GARDENER'S MONTHLY*, and the *American Journal of Horticulture*. Another class of pomological literature deserves prominent recognition, viz.: the host of descriptive catalogues, of our nurserymen, many of which are of the most reliable, instructive and interesting character. Ultimately, as a consummation much to be desired, came the Proceedings of the American Pomological Society for the last twenty-nine years, embracing in consolidated form the reports of the various States and districts, the discussions, the catalogues of fruits adapted to each section of our country, and other information, such as is nowhere else to be found in the history of pomological literature. Through these publications the reputation of our American fruits has attracted the attention of foreigners, so that European catalogues now possess many names of American varieties.

NECROLOGY.

But while I congratulate you on the prosperity of our institution, on its increasing influence, and on the lively interest manifested in its objects throughout our country, I am reminded of the absence of some who have labored with us for the promotion of our cause. Since our last session, there have been removed by death the following persons, who have held official positions in the Society: Dr. Benjamin F. Edwards, of Missouri; William Blanchard Towne, of New

Hampshire; Bartlett Bryant, of Vermont; Dr. Edwin S. Hull, of Illinois; Daniel W. Coit, of Connecticut; and Dr. John S. Houghton, of Pennsylvania.

Dr. Benjamin F. Edwards, of Kirkwood, Missouri, held the office of Vice-President for that State from 1867 to '69, and again in 1875 and '77. He was born in Darnestown, Maryland, July 2, 1797, and died at his beautiful residence in Kirkwood, April 27, 1877, at the ripe age of eighty years. His love of horticulture and kindred pursuits commenced early in life. He was intimately associated in the culture of the grape with Mr. Longworth, of Ohio, receiving cuttings from him of all the native and foreign grapes, which he scattered among the most enterprising of his numerous patients, and which made Madison county one of the first in the State in grape culture. He established a large vineyard in Jefferson county, on the German plan of close planting, having fifty varieties of grapes, which he eventually reduced to four: the Concord, Ives, Norton and Herbemont. His interest in all matters pertaining to horticulture continued through life. Dr. Edwards had lived in Kentucky and Illinois for a time, but he finally removed to St. Louis, with a great reputation as a physician, which in after life he fully maintained. Even in his busy profession, he constantly sought to promote all benevolent and Christian enterprises, believing "that what he had belonged to God, and was given to him to be used for His cause." He was carried to his grave in a full old age, universally beloved and respected. Many of us well remember his introduction as the oldest Vice-President at Chicago, and his appropriate reply; also his affectionate speech at St. Louis, as he placed a wreath presented by the ladies of that city, on the head of your presiding officer.

William Blanchard Towne, a Vice-President of this Society for New Hampshire, was born in Bow, N. H., October 12, 1810, and died suddenly in Boston, April 10, 1876, aged 65. He was in early life employed in farming; afterwards a merchant in Boston. He was Treasurer of the New England Historic-Genesalogical Society, and one of its Vice-Presidents, and an active member of the New Hampshire Historical Society; President of the Skowhegan National Bank, and the Milford Five-Cent Savings Institution, and member of the New Hampshire Legislature in 1872-73. Some years ago he purchased his father's homestead in Milford, and took a deep interest in the exhibitions of his State and county. Mr. Towne was a very useful man, and universally respected.

Bartlett Bryant, a Vice-President of this Society for the State of Vermont, was born at Hanover, New Hampshire, Feb. 26, 1822, and died at Derby Centre, April 26, 1876. He was from early life attached to the cultivation of fruits, and feeling the need of hardy fruits in his region he established nurseries in Stanstead, Canada and in Derby Centre and Enosburg, Vermont, introducing new fruits, and doing a large business in the distribution of hardy trees in the north and north-west, especially with regard to our colder

regions. No man, says a friend, has done more in the last twenty-two years in the promulgation of choice, hardy fruits than Mr. Bryant, for which his name will be honored in our north-eastern boundaries. His success in grafting the apple on the crab stock, to prevent injuries by frost, and the planting of large orchards of the crab varieties, and other very hardy apples, is well known. He was also much engaged in stock raising, especially of fine horses, possessing nine farms, and at the time of his death, large nurseries of fruit trees. He was a benevolent man, having made donations for schools, orphan children, etc., and his loss was much deplored.

Dr. Edwin S. Hull, of Alton, Illinois, was born in Connecticut, May, 1810, and died at his residence Nov. 8, 1875. In 1844 he removed to the famous Hull farm, near Alton. He planted large orchards of fruit trees and soon became a leader in this line. As frequently is the case in new enterprises, he met with disappointments in his culture, but, never discouraged, he contended with the evils of insects, blight, etc., ever looking forward to better results which made him an authority on such subjects. He gave much study to the character and depredation of insects, especially the curculio, and invented methods for its destruction. He wrote extensively on the causes of pear blight, and his efforts by root-pruning to prevent it. He aided largely in founding the Alton Horticultural Society, of which he was President; was State Pomologist; a member of our Committee on Foreign Fruits for 1867 and '68, and President of the Illinois State Horticultural Society, and for several years was horticultural editor of the *Prairie Farmer*. Many of us will remember how courteously, as President of the Illinois Horticultural Society, he welcomed us at Chicago two years since, when he said, "these meetings bring us together from the North, South, East, West, and British Provinces, to form friendships stronger than any political ties," and expressed the hope that at no distant day we should meet again. These hopes were blasted, for in a few weeks he passed into the spirit world.

Daniel Wadsworth Coit, at the time of his decease, was the oldest person who had held membership or office in our Society. He was born in Norwich, Conn., in 1787, and died in that city on the 18th of July, 1876, in the 90th year of his age, under the majestic elms where his widow now resides. Early in life he was engaged in New York in commercial pursuits, and highly respected as a merchant. In 1819 he went to Peru, where he resided for some seven years, in business relations with England, America and Spain, having more than once crossed the Andes, visiting the mountains and the ruined cities of the Incas. He repeatedly visited Europe and particularly Spain, in whose schools of art he took a great interest. In 1840 he returned to his native home; but just before the breaking out of the war with Mexico he went to that city, where he was established in business for awhile. From Mexico he went by way of Acapulco to California, where he was for some years engaged in

business. On his return to his home at Norwich, he devoted the remainder of his life to horticultural pursuits with as much energy and enterprise as he had given to mercantile affairs. As a cultivator of fruits and flowers he was one of the most scientific and successful of our times, proving all of the novelties and retaining only those in his opinion most worthy. He was formerly Chairman of the Fruit Committee for Connecticut. His good taste and discrimination made him an authority in the selection of the finest fruits. Mr. Coit was somewhat distinguished as an artist, and during his wanderings exercised his skill in making sketches which are of great merit. These, together with those which he had collected in Europe and America, he left to his family, among which are views in Lima and Mexico, the ruined cities of the Incas, of the Cordilleras, and especially sketches of San Francisco, then only a group of rough huts. His skill he retained to the close of life, and his works are prized not only as mementoes but as works of art.

Dr. John Skillin Houghton, of Philadelphia, was born in Dedham, Mass., Oct. 18, 1816, and died suddenly in Philadelphia, Dec. 11, 1876. Dr. Houghton was an active worker in the field of pomology and horticulture, and was chairman of the State Committee for Pennsylvania from 1869 to 1873. For many years he was a zealous experimenter in fruit culture, and although he failed to make it profitable he exerted an influence that was widely felt. His pear orchard consisted at one time of many thousand trees. He experimented extensively on the cutting and pinching-in system with pears, for the production of fruit, even at the expense of the vitality of the trees. He was a great worker and an invaluable member of the Pennsylvania Horticultural Society—full of enterprise, energy and despatch—and his death was much regretted.

Nor can I close this record without recognizing the sudden death of one of our members at Chicago, whither he went to attend our meeting. I allude to Mr. Samuel H. Colton, delegate from the Worcester Horticultural Society of Massachusetts, who died at the Grand Pacific Hotel in that city on the 13th day of September, 1876. Mr. Colton was largely interested in horticultural pursuits, and formerly in the nursery business. He was an influential member of the above named society, and for many years its treasurer. He took great pleasure in discussing and disseminating native fruits, was a frequent correspondent of horticultural journals, and for some years editor of the *Massachusetts Spy*. He was also a director in the Quinsigamond Bank, and treasurer of the People's Fire Insurance Company, and was a gentleman of sterling worth, most amiable in his disposition, and upright in all the relations of life.

Thus, three Vice-Presidents, and three others who have held official relations, have been removed since our last meeting. They have gone before us, their places have been made vacant, and are now filled by others. How long we shall remain, is only known to Him who holds the

issues of life in his hands. Some of our lives are wellnigh spent, and ere we meet again our sun will have set below the horizon of this world. Let then these lessons of mortality prompt us to greater diligence for the promotion of our cause.

CONCLUSION.

Standing here as conservators of American Pomology, enjoying as we do such peculiar privileges for research and discovery, let us use every effort to advance our cause by diligent experiment and observation, so that as we come up from session to session, we may add something to the common stock of information, and thus develop for the good of mankind the rich treasures which our science has in store for the world. Thus let us work on, hand in hand, to scatter these blessings broadcast through the land. Others may seek for the honors of public life or the victories of war, which too often carry with them the recollection of wounded hearts and painful disappointments. But let us continue to work on, feeling assured that our labors will cause no regret. As Mrs. Sigourney has beautifully versified my former remark—

"No stinging in the bosom of memory we're leaving,
No stain on the pinion of time."

Let us commence the new century in the history of our Republic with increased enterprise and zeal for the promotion of our cause, and should any of us be called from our labors on earth, let us feel assured that others will continue the work we have begun, and carry it forward to still greater perfection. Let the successes of the past stimulate us to greater exertions for the future. Let us work on, full of hope, regardless of all obstacles,

"Still achieving, still pursuing,"

until we shall reach that better land where the garden shall have no blight, fruits no decay, and where no serpent lurks beneath the bower—where harvests are not ripened by the succession of seasons—where the joys of fruition shall not be measured by the lapse of time.

HORTICULTURE IN CALIFORNIA.—A Horticultural Society has been formed at Los Angeles, the first, we believe in the State.

NEW YORK HORTICULTURAL SOCIETY.—At the March meeting of this Society, Mr. Boileau, who has charge of Trinity Cemetery, and is an enthusiastic landscape gardener, addressed the Society on the pruning of fruit trees, having pear and apple trees to illustrate his method. He made an admirable exposition of this subject, and was listened to with marked attention. Hyacinths, Camellias, Azalias, Carnations, Begonias, Orchids and Pelargoniums had premiums awarded to them.

THE KENTUCKY HORTICULTURAL SOCIETY has determined to compete for the Wilder medal to be awarded at the meeting of the American Pomological Society, to be held at Nashville, Tenn., in September, 1879. This medal is given to such societies only as make a meritorious display of fruits. The Kentucky society expects

to place upon the tables not less than one thousand plates of fruit.

MARYLAND HORTICULTURAL SOCIETY.—The practice of having instructive talks about the objects exhibited we are pleased to see is growing. At the Feb. meeting of this Society Mr. Wm. Fraser, who has demonstrated in the conservatory at Patterson Park, how in practice the best results are obtained in plant growth, read an excellent paper, on this interesting subject tracts in our next. Mr. Pentland made a spirited little speech, bearing rather severely on the deficiency of floral display and taste in Baltimore as compared with some other cities; and the President, Mr. Perot, made some remarks on the adaptation of gloxinias, achimenes and similar subjects, to the ornamentation of the greenhouse in summer.

The committee gave a special commendation to a seedling Carnation "Waverly," shown by August Hoen, for its large and brilliant flowers, free-blooming qualities and great fragrance; to James Pentland for his seedling Camelia, "Stonewall Jackson," exhibited for the first time, of good form and color and beautifully variegated; to W. D. Brackenridge for a specimen in flower of Mahonia japonica; to S. Feast & Sons for cut Camellias, Roses, Pansies and White Hyacinths; to Captain Snow for fine display of Orchid blooms; to Robt. J. Halliday for a general collection, including a fine Pandanus Veitchii; and to Patterson Park (Wm. Fraser, Supt.) for a handsome and well-filled table, including notably well-grown specimens of Phajus Wallachi, Abutilons John Hopkins and Darwinii, &c.

MASSACHUSETTS HORTICULTURAL SOCIETY.—At the meeting on March 2d the best winter pear exhibited was decided to be the Beurre D'Anjou, from J. V. Wellington; the next best winter variety from the same. C. E. Grant's Baldwins were the best winter apples. Mr. John E. Barker received a vote of thanks on his retirement from long and active service as chairman of the Floral Committee. A testimonial of three crayon photographs of himself was presented to Mr. Parkman for his distinguished services to Horticulture. Hon. M. P. Wilder presented a copy bound of all his speeches and addresses.

The president read the following letter, which had been received by him:

"The undersigned, intrusted in advancing a practical taste for floriculture, especially among the children of the laboring classes, desire that the Massachusetts Horticultural Society shall offer prizes for window gardening, and conduct all the business of advertising, exhibiting and awarding prizes necessary to insure success."

Signed,

RUFUS ELIS.
HENRY W. FOOTE.
C. A. BARTOL.

It was voted that the Committee on Plants and flowers, with Mrs. J. W. Wolcott, Mrs. C. N. S. Horner and Mrs. E. M. Gill, be a special committee to establish and award prizes, for window gardening, agreeably to the above communication.

THE
GARDENER'S MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by **THOMAS MEEHAN.**

Vol. XX.

MAY, 1878.

Number 233.

FLOWER GARDEN AND PLEASURE GROUND.

COMMUNICATIONS.

DUTCH BULBS IN THE SOUTH.

BY M. W. CALDWELL, QUERY'S TURN OUT,
MECKLENBURG CO., N. C.

I am a recent subscriber to the *GARDENER'S MONTHLY*, and am well pleased with it. I have noticed a complaint of Dutch bulbs deteriorating in the South after a few years. I have this day sent to your address by express a box of hyacinth blooms for your inspection and judgment, and your opinion as to their retrograde movements. I have been cultivating these same bulbs from five to seven years. They were bought of Henry A. Dreer, of your city. Many of the bulbs send up from three to five spikes. The three White Double Pink Eye in the package all grew from one bulb. Should you wish to hear about the cultivation, I can inform you at another time. Many of the best spikes were faded. I have not sent you all the kinds I have. I have a garden of flowers, including nearly everything desirable to please, that will grow in the open ground. The Hyacinths were mixed kinds without names. Tulips, the same, just beginning to bloom. The Peach blooms are the Double and Italian and Van Buren Dwarf, &c.

[We have rarely seen finer flowers. They were superior to the average of newly imported bulbs. The offered account of their culture would be very acceptable.—ED. G. M.]

THE SLIPPERY ELM.

BY MR. J. JAY SMITH, GERMANTOWN, PHILA.

It is one of the regrets of planters in this region of Philadelphia that we cannot have the grand Elms of our Eastern States, because of the terrible attacks made on them by insects. And just here let me ask the wise men who made the nurseries for the "park," if they know of this sad depredation, for we see they are setting out vast numbers of the attacked—and therefore useless for ornament—Elm trees. But this apart, for time is to test the wisdom brought to bear on our park planting. I want Mr. Meehan's opinion as regards the freedom of the Slippery Elm, *Ulmus fulva*, from insects. My own experience is that it is free from attack, and if so, as it has a weeping habit, it will be invaluable in the Middle States. I have a specimen equal to any of the great ornamental Elms of New England, and I learn with pleasure, Mr. Editor, that you also have a perfect tree unattacked by enemies. But more, I hear that you and Mr. Parsons have propagated largely from this, and I want to know all that you know on the subject.

[The Slippery Elm in this region has its leaves badly riddled by a small beetle—a species of *Galeruca*—during the latter end of Summer; but the trees do not look near so shabby afterwards as other species do after similar attacks. Chestnut avenue, Germantown, has its side-walks planted with them. They are now about twenty years old, and are very beautiful.—ED. G. M.]

COMPARATIVE ROSE LIST.

BY BERGEN, JERSEY CITY, NEW JERSEY.

I send you a copy of the English election list, and one of Mr. Ellwanger (of Ellwanger & Barry) called the American List of Roses, taken from the *Garden* of Nov. 17th, 1877, hoping that you may find it of sufficient interest to publish it. If you do it might lead to a further discussion of the merits of many of the roses and benefit all lovers of them, and the trade also by making a greater demand for what might prove the greatest favorites. Other points of interest would arise as to fresh bloomers, the most perpetual, &c., of the hybrids, of which the list is largely composed. Why should such general favorites as General Jacqueminot, Safrano, Bon Silene, &c., be left out, when they have been so generally adopted as forcing roses in this country?

Best 48 Roses, English Election and Mr. Ellwanger's lists:

English.	American.
1 Marie Bauman.	La France.
2 Alfred Colomb.	Maréchal Niel.
3 Charles Lefebvre.	Marie Bauman.
4 La France.	Louis Van Houtte.
5 Maréchal Niel.	Alfred Colomb.
6 Baronne de Rothschild.	{ Charles Lefebvre.
7 François Michelon.	{ Ferdinand de Lesseps.
8 Louis Van Houtte.	Catherine Mernet.
9 Etienne Levé.	Mlle. Marie Van Houtte.
10 Marquise de Castellane.	Mad. Victor Verdier.
11 Mad. Victor Verdier.	Mlle. Marie Rady.
12 Duke of Edinburgh.	François Michelon.
13 Mlle. Marie Rady.	Marquise de Castellane.
14 Comtesse de Oxford.	Baronne de Rothschild.
15 Doctor Andry.	Etienne Levé.
16 Sénateur Vaisse.	Mlle. Eugénie Verdier.
17 Xavier Olibo.	John Hopper.
18 Mlle. Eugénie Verdier.	Abel Grand.
19 Edouard Morren.	Comtesse de Oxford.
20 Catherine Mernet.	Sénateur Vaisse.
21 Horace Vernet.	Victor Verdier.
22 Marguerite de St. Amand.	Glorie Dijon.
23 Emilie Hansburgh.	Comtesse de Sambac.
24 Ferdinand de Lesseps.	Captain Christy.
25 Dupuy Jamin.	Niphetos.
26 Camille Bernardin.	Chehunt Hybrid.
27 John Hopper.	Prince Camille de Rohan.
28 Reynolds Hole.	Comtesse de Serenye.
29 Victor Verdier.	Mlle. Marie Cointet.
30 Prince Camille de Rohan.	Rubens.
31 Mlle. Marie Van Houtte.	Belle Lyonnaise.
32 Captain Christy.	Comtesse de Chabillant.
33 Madame Lacharme.	Marguerite de St. Amand.
34 Devoniensis.	Mad. de Ridder.
35 E. Y. Teas.	Mlle. Therese Levé.
36 Duke of Wellington.	Horace Vernet.
37 Souvenir d'un Ami.	Exposition de Brie.
38 Pierre Notting.	Souvenir de Malmaison.
39 Souvenir d'Elise.	Marie Ducher.
40 M. Marie Finger.	Fisher Holmes.
41 Mad. Marie Cointet.	General Washington.
42 Fisher Holmes.	Pierre Notting.
43 Monsieur Norman.	Mad. Norman.
44 Comtesse de Serenye.	Mlle. Bonnaire.
45 Sir Garnett Woollsley.	Mad. Berard.
46 Mad. Charles Wood.	Mad. Trifle.
47 Star of Waltham.	Maurice Bernardin.
48 Mlle. Annie Wood.	Reynolds Hole.
	Mad. Marie Finger.

PINUS CLABRA.

BY DR. MELLICHAMP, BLUFFTON, S. C.

This is a splendid tree, and I have often wondered that it has not been cultivated. It is

rare about me, indeed, never abundant anywhere; but last fall I saw very beautiful and stately trees on the edge of the swamps near the Savannah river rice fields. A few years ago I procured two or three trees, a foot or two in height, but they have hardly grown at all in this dry and sandy soil; and yet I have seen them grow in such situations as Calabogue Sound, Hilton Head—within sight of the ocean. But they usually prefer the rich wet knolls of the swamps, but never anywhere do they form forests of pines as do the others.

[Hoopes, Bro. & Thomas had a nice specimen in their collection at the Centennial Exhibition.—ED. G. M.]

CARPET BEDDING.

BY C. J. BJORKLUND, HAMPTON, VA.

Fig. 13, 24 feet long by 8 wide. 1 is Alternanthera Paronychioides major; 2, A. versicolor;

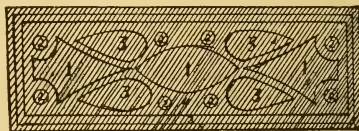


Fig. 13.

3, A. amoena; 4, Leucophyton Brownii; and 5, Sedum acre elegans.

Fig. 14 has a diameter of 15 feet, with thereon arranged thirteen smaller circles; the center circle *a* is to be a specimen of Agave Americana variegata in the center, then Sedum spectabile roseum; one ring of Rochea falcata; one do. Cerastium arvense; one do. Aloes; and one Pyrethrum. Circles *b*, centres Agave Americana var., Sedum micranthum, Rochea falcata, and Pyrethrum. Circles *c*, specimens of Cotyledon

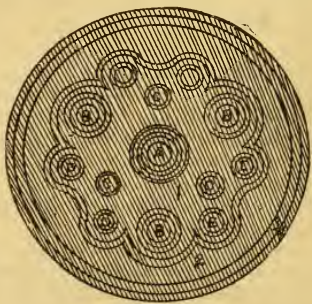


Fig. 14.

pulverulentum, *Sedum acre*, and *Pyrethrum*. Circles *d*, *Agave filifera nana*, *Sedum glaucum*, *Cacalia*, and *Pyrethrum*. Circles *e*, *Agave verucosa*, *Sedum acre aureum*, *Aloes*, and *Pyrethrum*. Circles *f*, *Agave Americana*, *Sedum oppositifolium*, *Sempervivum Donklari arborea*, and *Pyrethrum*. 1 is *Alternanthera amabilis latifolia* surrounded by a lingering ribbon of

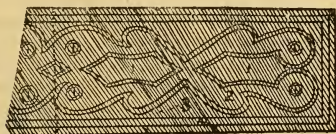


Fig. 15.

Pyrethrum; 2, *A. amœna*; 3, *Leucophyton Brownii*; and 4 *Sempervivum montanum*.

Fig. 15 is the half part of a bed, 40 feet by 8 wide. 1 is *Alternanthera magnifica*, bordered by *Pyrethrum*, as well as is 2, *Cerastium arvense*; 3, *Alternanthera amœna*; 4, *Pyrethrum*; and 5, *Sedum acre elegans*.

Fig. 16, 27x8. *Alternanthera versicolor*; 2, *A. spatulata*; 3, *Sedum acre*; 4 *Pyrethrum*; 5, *Alternanthera magnifica*; 6, *A. paronychioides*;

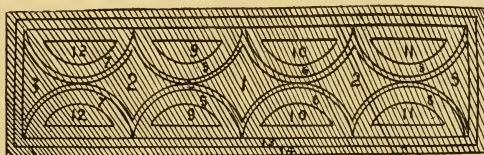


Fig. 16.

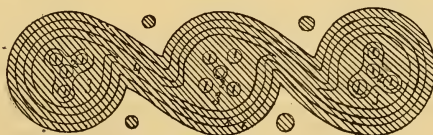


Fig. 17.

7, *A. amœna*; 8, *A. spectabilis*; 9, *Pyrethrum*; 10, *Cerastium tomentosum*; 11, *Mesembryanthemum cordifolium variegatum*; 12 *Sedum acre elegans*; 13, *Peristrophe angustifolia*; and 14, *Sempervivum Californicum*.

Fig. 17, 1, single specimens of *Chamaepeuce diacantha*; 2, *Pyrethrum*; 3, *Alternanthera paronychioides*; 4, *A. amœna*; 5, *Leucophyton Brownii*; 6, *Mesembryanthemum cordifolium*; and the small circles on the lawn are single specimens of *Sempervivum Donklari*.

VINES.

BY REV. HENRY WARD BEECHER.

1. Every vine, shrub or tree that approaches the condition of evergreen, is valuable for its winter beauty. Hall's Japan Honeysuckle is the most valuable of all the family of hardy Honeysuckles. It is hardy, luxuriant, a real everbloomer the Summer through, of fine green leaf, and, except under long continued severely cold weather, it is evergreen. Under my window, as I write, is a vine spread upon the ground, as green as in mid-summer.

The *Flexuosa*, or Chinese, is near by, quite shrunk with cold, and will do no more till Spring. If one can have but one, that one should be Hall's. If suffered to grow along the ground, it will root at almost every joint, and furnish abundance of new plants without trouble.

I have enjoyed a method of treating Honeysuckles on the lawn, viz., putting about a vigorous root five or six stakes, say four feet high, surrounding them with twine, about three hoops at equal distances, and allowing the vine to cover them. By the second year an altar of green will be formed, most comely to the eye. If the *Aurea reticulata* shall be used, it will give a

splendid golden effect. Golden vines should not be suffered to twine with others, as the appearance will be that of a sickly vine mixed with a healthy one; but, kept separately, the effect is admirable.

The *Lonicera fragrantissima* is a shrub that comes very near being evergreen. In sheltered places it will hold its leaves till after Christmas. At Peekskill, forty miles north of New York, on the flanks of the Highlands, it is yet (Jan. 4) in good condition, though it has passed through

several severe freezings. Its perfume in Spring is delicious.

2. Why has not the *Styrax* been brought into notice? It has gone through last Winter, at Peekskill, without being harmed. There are few shrubs that can compare with it for beauty in its blossom season, and it ought to be in every garden. I can get it only by sending to England for it. It is finer than *Andromeda arborea*, which with me is not hardy enough to flourish, or I am not skillful enough to make it live except as an invalid. I do not know the specific name of my *Styrax*, but I think it is *Styrax japonica*. There are several native species that deserve to be introduced to our nurseries, to say nothing of scores of other things unknown and unattainable now. I know the reply. Nurserymen cannot afford to cultivate stock for which there is no demand. True, in large quantities; but American nurseries have now reached a degree of development that will enable many of them to bring forward unknown plants, and give them such publicity as shall create a demand. Some agreement might be had by which one would fill out a special department, another a different one, so that out of six or eight nurseries a gentleman might secure what he wished. I cannot secure from any or all American nurseries the hardy Pines. Even *Pinus mitis*, so abundant in the fields, is a stranger to most nurseries—not to the *catalogues*. Oh, no! the *catalogues* are all right, but orders come back unfilled in a manner that leads one to think that *catalogues* are copied from European lists, or are made up as fancy work.

3. Speaking of Conifers, much is written about transplanting. My experience is, that evergreens may be transplanted at any time of the year when the ground is open and workable. I do not lose the half of one per cent. of the hundreds that I annually move. If they are ripped up and jerked out of the ground, laid in the sun, and, worse yet, in the mud, until others have been slaughtered, and then hauled in an open cart, stuck into a cramped hole, chunks of dirt thrown in, and trodden down by one's feet, no wonder they die. It would be a shame if they did not. Take up the roots largely, cover them from the light as you would your children's bodies, plant them in a larger hole than that which they have left; take time; press the roots as if you were combing your own hair for a party; see that they are not planted an inch deeper than they stood before moving, and then

—mulch—mulch—mulch—them. After that you may whistle at Summer droughts or Winter freezing. I have had as good luck in orders from nurseries in September and October as in March or April. I lost some—I always do, for the most careful nurserymen are careless, judged by my standard. I had as lief transplant in July as in May, in November as in June. It only requires a little more care. In that murderous season, four or five years ago, I had planted many scores of Coniferous evergreens, but did not lose one per cent.—on the windy hills and sharp climate of Peekskill—and all because the plants were *abundantly* planted and *abundantly* mulched. Mulching, Summer and Winter, is supreme safety, for ornamental trees and for fruit trees. I have saved a pear orchard by a system of mulching in Summer as well as Winter.

4. I mean to write you bye-and-bye of my mistakes and blunders; successes are all very well; everybody likes to narrate them. But there is great instruction in well-considered blunders; only, men are ashamed to relate them; and so much knowledge is lost. There is hardly a department of culture, esculent vegetables, ornamental trees, fruit trees, flowers, vines, etc., etc., in which I have not been rich in mistakes. Ought they to die unrecorded? Enough. My paper has given out, and your patience, too, doubtless.

[It is not often Mr. Beecher makes such mistakes as that suggested by the last four words.—Ed.]

THE AMARYLLIS.

BY MISS A. G.

There are many plants allied to the *Amaryllis*, as we find by looking through catalogues and books on Bulbs. The following were taken from a Dutch list of Bulbs:

Alstroemeria—Flowers of great beauty and easy culture. *Brunsvigia*—Large bulbs, pink or crimson flowers. *Buphane*—Allied to *Brunsvigia*, pink or scarlet flowers. *Coburgia*—Green-house bulbs, flowers yellow, or orange-red. *Crinum*—Flowers resembling the *Amaryllis*, white or rose. *Griffinia*—Rose, blue, or violet lily-like flowers. *Habranthus*—Allied to *Amaryllis*, fine for pot culture. *Hippeastrum*—Generally known as *Amaryllis* *Ismene*.—Very pretty flowers of white or yellow. *Lycorus*—Bears beautiful flowers, golden lily. *Nerine*—Guernsey lily the type, vermilion scarlet flowers. *Pan-*

cratium—Delicate white sweet-scented flowers. Phædranassa—Yellow, or bright scarlet flowers. Phycella—Charming flowers, yellow, red or scarlet.

Of the above we have bloomed the *Crinum*s (*Capensis* and *Amabile*) *Griffinia*, *Hippeastrum*, *Ismene*, *Nerine*, and *Pancratium*; and have cultivated *Brunsvigia*, *Coburgia*, *Lycorus*, *Alstroemeria*; *Phædranassa*, and *Phycella* without blooming them. Our *Alstroemeria* died of heat and a dry atmosphere. *Brunsvigia*, and also *Belladonna* lily, may have been disturbed too often; they grew vigorously. The *Lycorus* (a lovely flower) divided into two, and refused to bloom. The *Phycella* ingloriously gave up and died. The *Phædranassa* grew well, but declined to give us one blossom to satisfy our longing eyes, and the *Coburgia* followed its example.

I tried for many years to learn in what situation the *Hippeastrum* variety grew, but excepting a mention of one, by Livingstone, which he found in a grassy meadow, heard nothing, nor of any one that knew, till presented with "Herbert's *Amaryllidea*." In this I learned that the yellow, or orange variety grew among the rocks, in a forest, and sometimes in the crotches of trees. Since then I have met a florist in Baltimore who has been on several United States Expeditions, and who informed me that he had seen the evergreen (or fall blooming) variety growing in the West Indies, in damp spots behind rocks. After that a florist told me that he had been speaking with a physician who had been to the West Indies. This gentleman told him that he had seen the *Hippeastrum* in bloom, by the acre, in or near the edges of forests. An English lady traveling in the West Indies, mentions them as growing in the forest. Herbert describes *Crinum*s as growing in or near ditches of water. A large variety brought from Africa was said to have been found growing close to a river. I have found, too, when cultivating the *Crinum*, *amabile*, *Capense*, *Americanum*, &c., that if freely watered (as freely as for a *Calla*) they grew with astonishing luxuriance.

Since writing last upon the *Amaryllis*, I have heard of various modes for its treatment, and some very successful ones. Lately a lady told me that it had been her practice, at the time she removed her plants to the garden, or yard, to place her *Amaryllis* (*Johnsonii*) in the cellar, putting the pots on top of a cupboard, where they

remained, without water, till September. She generally put them away in the pots, but sometimes without. The cellar was a slightly damp one. In September they were re-potted in a mixture of garden earth and chicken manure, the latter being taken from the floor of the chicken coops, where it was partially mixed with earth. They were then put into the windows of a warm sunny kitchen, and never failed to bloom.

Another lady reversed the mode just described. As soon as decidedly cold weather approached she placed her *Amaryllis* in the cellar, and left there with occasional watering (the cellar being a dry one), till warm spring weather, when they were sunk in the garden border. They bloomed after this treatment without fail, after being previously kept in a sunny chamber window, during the winter, without blooming.

A lady of Philadelphia plants hers out in the Spring, pots them in the rich earth as soon as cool weather approaches, then rests them in the cellar till the middle of December, when they are taken into a warm, sunny room. In two weeks they are, generally, in bud, and never fail to bloom. One lady kept the fall-blooming (or evergreen) kind out of the ground for 8 months; it was then put into the garden where it bloomed finely during the latter part of Summer.

EDITORIAL NOTES.

HORTICULTURE IN JAPAN.—The Japanese, after having furnished our gardens with some of our best treasures, are retaliating, and our popular flowers now appear in their gardens.

LAMIAM PURPUREUM.—This pretty European species is becoming somewhat common in cultivated ground in the North Eastern States. If we must have imported weeds, it is some compensation when they are pretty ones.

LILIAM KRAMERI.—This superb Japan lily, with others has been imported, in some quantity, direct from Japan, its native country, by Mr. Such. We have hitherto been dependent on European enterprise.

FOREST GROVE CEMETERY, UTICA, New York. Under the management of Mr. Roderick Campbell, this is achieving an eminent reputation. A newspaper article now before us speaks of it in terms of the highest praise. We like to note these things, as nothing is more

melancholy than the neglected grave yards one sees so commonly in traveling through the country. "Honor thy father and thy mother," was surely not intended to cease with their lives. Of course, this care for the memory of the dead often degenerates to vulgarity; but all things have their extremes.

THE ENGLISH DAISY.—From time to time the beautiful little English Daisy is taken in



hand by the improvers, with new styles or at least, some new feature. In taking up Messrs. Vilmorin's (the celebrated Paris seedmen,) catalogue, we notice a fresh illustration of this fact.

They are very beautiful spring flowers, but in our country somewhat difficult to keep over summer. They require a cool soil and situation, such as a sunk pit, for instance. Though so many Americans have heard of the Daisy, few have seen it. The accompanying illustration will give them an idea of it.

NEW OR RARE PLANTS.

THE THICK-LEAVED ELM.—The *American Agriculturist* has a good word for the *Ulmus crassifolia*. It was gathered by the *Agriculturist* twenty-five years ago near San Antonio, and was previously figured in Nuttall's addition to Michaux's *Sylva* and named *Ulmus opaca*, though in the *Flora of Arkansas*, he had already described it as *U. crassifolia*. It seems likely to be hardy enough to stand where the *Maclura* does, which is a native of the same State.

SCRAPS AND QUERIES.

THE BARTRAM OAK.—This rare form, named by Michaux, *Quercus heterophylla*, is very much desired by Mr. Eli K. Price, one of the Honorable Commissioners of Fairmount Park, to help complete the Michaux Oak grove. If any one has a specimen that is transplantable, Mr. Price would like to secure it.

GREEN HOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

AMONG THE ORCHIDS.

BY MR. WM. FALCONER, CAMBRIDGE BOTANICAL GARDEN, MASS.

The following notes, written from memory, are the result of a flying visit during the first fortnight of December.

There is no greater sign of the advancement of horticulture in the East than the increasing demand for, and high appreciation of, Orchideæ. Anything and everything is not indiscriminately grown, but the finest species and varieties, and

the largest specimens are the most in demand. Big specimens sell at a profit, but little plants can hardly be got rid of at a sacrifice. Europe and America are scoured for the treasures, and direct importations from Mexico and South America are often met with. In the interest of some of our prominent orchid owners, J. S. Rand, Jr., late of Dedham, Mass., is now on a collecting tour to Brazil. The cultivation of most of the tropical species is easier here than in England, but when it comes to *Masdevallias* and some *Odontoglossoms*, we have either a deal to learn or contend with, as regards growing them compared with results in Europe.

On entering the greenhouses at Menand's nur-

series at Albany, the first plant I noticed was *Vanda cœrulea* in a suspended basket, and with three spikes, six and nine blooms respectively. *Cymbidium Mastersii* had three spikes of expanded flowers. *Cypripedium hirsutissimum*—a very shy bloomer, especially in the case of small plants—had several large waxy flowers, and a specimen of *C. Roezlei* had four spikes—one a branched one, and several blossoms. Many plants of *Odontoglossum grande* were growing like weeds, and several of them had three and four spikes of immense flowers. *O. Insleayi*, and *O. I. leopardinum*, were also exceptionally thrifty and in bloom. Mr. M. prefers pot to basket culture for most of his orchids, and I observed most of his *Odontoglossums* were grown in earthy compost. He also distributed his orchids amongst his general collection of other plants, because he dislikes the formality of an isolated mass of *Orchidæ*. Mr. Corning has an immense collection of orchids; indeed, as far as I know, it is by far the largest in the country. He has many fine specimens, and his *Phalæopsis*—particularly *Schilleriana*, are large and healthy. *Oncidium tigrinum* was prettily in bloom, as was likewise the showy *O. Rogersii*. *O. ornithorhynchum* displayed some very handsome spikes, and the white flowering variety, of it—very scarce—was also in bloom. Large plants of *Angræcum eburneum* showed several bold spikes, and a very fine specimen of *Anselia Africana* promised a speedy reward. *Odontoglossum grande* and *Insleayi* were both in bloom, and, too, in excellent health. *O. Rossii majus* was also in flower. Mr. Gray, the gardener, told me that he has difficulty in growing *O. Phalæopsis*. I also noticed some of the red-flowering *Masdevallias* in bloom.

General Rathborne has a select and valuable collection of orchids, but not nearly so many kinds as Mr. Corning has. The general's plants however, are the very pictures of health and vigor, cleanliness and ripeness, and many of them, especially *Vandas*, are large specimens. Two plants of *Vanda cœrulea* were in flower, each having ten blooms on a spike, and they were lovely. *Angræcum eburneum* with several long spikes was bursting into bloom, and if I remember rightly it was here I saw *A. sesquipedale* with two spikes of long-tailed flower-buds. A white *Phalæopsis* was in bloom, and the many neighboring spikes that were appearing promised early wealth. *Saccolabium giganteum* had one developed spike, and *Cymbidium Mastersii*

had three with more to follow. *Cypripediums* were in great profusion, particularly *venustum*, one specimen of which had several dozens of flowers.

No shadings whatever are used during the winter months, and the robust sturdiness and flower-promising look of the plants, bespeak their appreciation of the short-day sun.

The general drew my attention to diseased spots in the leaves of some of his *Phalæopsis Schilleriana*, and which were spread along the upper surface like large and deep pock-marks. When in England last summer he had a talk with Dominy at Veitch's, about this disease, and he expressed the opinion that he believed it to be the work of parasitic fungi, and recommended the application of powder-sulphur, which the general has applied. Of course the sulphur can only prevent fungoid growth, and not restore to good the evil already done. The general also spoke to me about diseased spots sometimes appearing on the leaves and flowers of his orchids during the summer months. I recommended a little fire-heat by night throughout the whole summer, even if the ventilators be kept open night and day. This is to provide a sweet and constantly circulating atmosphere, and my experience in the United States has proved it an excellent plan and more than worth the money.

RALPH AND FANNY GERANIUMS.

BY MR. WM. WHITE, SUPERINTENDENT OF ELLIS PARK, CHICAGO.

In the last number of your valuable MONTHLY you notice two Western Geraniums, Fanny and Ralph, raised by John Goode, Esq., of this city. Will you allow me to say a few words in their favor? I have grown Fanny for three years, and tested it thoroughly, both as a pot plant and a bedder, with the most satisfactorily results. As a pot plant (in my opinion) it is unsurpassed, always in bloom, Summer and Winter. The flower is a rich salmon color, of fine form and substance, the finest I have ever seen on a bronze Geranium.

Ralph is also a very fine Geranium; it is a very robust grower, habit first-rate, and as a bloomer it is simply immense. A bed of it last season in Ellis Park attracted a great deal of attention, both from florists and the public; the flowers are a peculiar shade of crimson, trusses very large and carried well above the foliage, and has the property of holding its center until the whole truss is fully expanded. I grow 150 of the

newest and best English, French, and American varieties, all fine, but as a hedder, Ralph is king. I have no interest in the sale of plants; my object is to call the attention of lovers of plants to two good things, and to encourage home productions.

[Since our note appeared we have seen blooms of Ralph, and agree with all that is said of it. The shade of color is similar to one now well known as General Lee, but it is much superior in form and other good characters.—ED. G. M.]

KILLING MEALY BUG.

BY G. WRIGHT, ROCK FALLS, ILL.

For more than a year I have used kerosene to destroy mealy bug and scale louse, and have found it the most convenient and effectual remedy. I apply it to the backs of the insects with a feather, and brush lightly around the axils of the leaves infested, and I cannot perceive any injurious effects of its use upon the most tender plants. Hot water cannot be used upon large specimen plants, besides, there are some succulent plants, like *Mimulus*, which will not endure 120° without injury. Of late years it seems utterly impossible to keep a conservatory or bay window free from these two pests, for the reason that every accession of new plants from the large greenhouses brings a new stock of bugs. For my own part I would rather pay double price for clean plants, than deal with a lousy florist.

BRASSIA, MILTONIA AND ODONTOGLOSSUM.

BY C. H. SNOW, BALTIMORE, MD.

These three species of orchids are closely allied, botanically, to the *Oncidiums*, and resemble them in their growth and manner of blooming. They all send their flower stems from the base of the bulbs, which stems vary in length from a few inches to three to five feet.

Brassia. Although many orchid growers do not place much value on these, yet some are really pretty, and all are curious and free flowering. They all belong to the Western Continent, and come mostly from the warmer parts, and with me do well in the hottest place with the E. India orchids. The sepals and petals in all the varieties are long and slender, and resemble at a distance some huge insects.

Brassia Lanceana and *Lawrenceana* are both from Guiana, resemble one another very much, and grow well in shallow baskets with broken crocks and charcoal. The sepals and petals are

greenish yellow barred and spotted brown, lip yellow spotted purplish brown.

B. Caudata. Sepals and petals greenish white, lip pure white, spotted brown. West Indies *B. verrucosa* (*Mexico and Guatemala*) sepals and petals pale transparent green; lip white, with green warts. *B. Gireoudiana*. This is the handsomest species that I have seen. Comes from Central America. The flowers are bright orange yellow spotted with reddish orange. Flower stems two feet long.

There are several other species, differing from the above slightly, in marking. They mostly bloom in the Spring, just before they commence to make new growth; but they do not always do so, as the Guiana varieties will bloom twice a year if handled properly.

Miltonia. This beautiful genus comes from Brazil. A few species from Mexico are now placed as *Cyrtorchilus*, and these latter are not remarkable for their beauty. *Miltonias* mostly bloom in the late summer or early autumn months, and will commence to make new growth in the fall and winter, if kept in a good heat say from sixty to seventy degrees; and I find all orchids coming from South Brazil grow through the winter months, and do well and bloom well if kept warm and near the glass. At this time nearly all my *Cattleya*, *Laelia*, *Miltonia*, *Oncidium* and *Zygopetalons* from Brazil are growing strongly, and this coincides with what I have seen in Brazil, for it is late summer there now. *Miltonias* have two distinct styles of bulbs, one small, from two to three inches long and flat. These belong to the *M. spectabilis* varieties, and have short flower stems with one or two large flowers. The other form of bulb is more cone-shaped, narrowing to the top, and from four to seven inches long. *M. candida* belongs to this class and they have longer flower stems and more flowers.

All *Miltonias* have very small roots, which I think are only annual, the plants deriving sustenance from roots emitted from the young growth.

I find the *spectabilis* varieties do admirably on rough cork, the rougher the better. The stronger growing varieties grow well in small pots, well drained, always keeping the plants well above the pots. Those on cork need syringing twice a day when in active growth. They should never be allowed to get too dry, as the bulbs are small.

Miltonia spectabilis. The flowers of this species are quite large, sometimes over three

inches in diameter; sepals and petals white, with a slight greenish tinge; lip white, with a large purple spot at the base. The flowers come singly from the base of the bulbs, though I have had occasionally two when the bulbs were very strong. There are many varieties of *M. spectabilis*. Some entirely white and others with a pink spot on the lip.

M. bicolor. I think is only a variety of *spectabilis* with larger and brighter flowers.

M. Moreliana. This resembles *spectabilis* very much, both in mode of growth and shape of flower, but it is far handsomer. Sepals and petals rich purple; lip large and rosy purple veined with rose. This is a rare plant. I have had many sent from Rio for *M. Moreliana*, but never got but one that was true. Blooms in August or September.

Miltonia candida. This beautiful plant has from four to seven flowers on the stem, which is upright. Flowers in the sepals and petals are rich chocolate, barred with bright yellow; lip pure white, marked at the base with rosy purple or pink. In this species the lip is shaped something like the lip of a *Lælia*, but in most of the other species it is flat.

M. Clowrsii. Growth like the last. Flowers on a flexuous stem, with from four to ten flowers two and a half inches in diameter. Sepals and petals chocolate and yellow; lip flat, white, with a purple base. Blooms in October and is very graceful. There are several other beautiful species of *Miltonias*, but they are rare. The blooms of all kinds of *Miltonia* are very easily effected by water, and it is best to remove them when in bloom to a cool dry place, taking care not to let any water fall on the blooms in watering them. If the flowers are kept dry they will remain good three weeks.

ODONTOGLOSSUM.

In the whole orchid family there is no genus that has caused more discussion among orchid growers than the *Odontoglossum*. Coming, in many instances, from elevated regions, where they are surrounded by fogs and mists, they are exposed at times to great vicissitudes of temperature. Nothing is more changeable than the climate of tropical mountainous regions. I have seen the thermometer indicate from 90° to 95° at mid-day and clear, then 40° at daylight the next morning and misty; at the same time the daily change of temperature at the base of the mountain would not exceed probably 12° to 15°. That there is something peculiar needed

in the treatment of this genus is evident from the fact that while in England and on the Continent some succeed marvelously with them, others fail. Some grow them in cool houses, which they try to keep between 40° and 60°; others do not mind if the mercury sometimes goes up to 85°, and in both cases succeed. That their proper cultivation should be sought is natural, for I think they are unsurpassed among orchids. Some pure white, or white spotted red, brown or yellow, others yellow or brown, or both these colors mixed in many ways; and again, pink or red are the predominating colors. In size from an inch in diameter as in *O. putchellum* to nearly six inches in *O. grande magnificum*; stems from a few inches in length as in *O. Rossi*, to three or more feet in *O. Læve* and *O. carniferum*. Nearly fifty species are now offered for sale in English catalogues, and yearly the number is increased. No doubt varieties surpassing any that we have yet seen will be discovered, though to look at a plant of *O. Alexandræ*, *O. vexillarium* or *O. triumphans* in bloom, it would seem hardly possible.

There appears to be a great difference in the *Odontoglossums* coming from Mexico and Guatemala, and those from the countries in the north of South America. With the former I have succeeded admirably, but with the South American species I have failed. I find that the Mexican varieties make but one growth in a year, and remain dormant for some months; but the South American varieties show a tendency to grow all the time, and I believe that in their own homes the South American species bloom twice a year. It is well known, that countries near the equator have two Summers, and two crops are made on the same ground in a year. Now in New Grenada, Venezuela, and Ecuador, the home of the *O. Alexandræ*, and *O. triumphans*, &c., the sun is always near, which gives them heat, and coming from elevated positions they have an ample supply of moisture all the time. But Mexico lies near the Tropic of Cancer, is a much drier country, and though vegetation is always green, has really only one long Summer, then a long Autumn or Winter, and the same is the case with South Brazil.

The climate of all countries near the equator is less subject to variation than farther North or South. At Demerara and Para, the annual variation is not over 15°, say from 75° to 90°. Bogota, nearly under the equator, but nearly six thousand feet above the sea level, has a varia-

tion of about 25°, say from 42° or 45° to 70°. This latter elevation is the home of some of the finest Odontoglots. I find that our extreme Summer heats are far more fatal to these than the Winter cold—in fact, it is the only cause of our failure; and if we ever expect to succeed with them, we will have to build houses facing the north, partly underground, and plenty of arrangements to keep a cool moist atmosphere during the months from May to October. After that they may be placed anywhere in a temperature of 50° to 65°, and they will do well. I will give a few remarks on varieties that have done well with me in a temperature of from 50° to 65° in Winter, and as cool as possible in the Summer. I put mine in my Camellia house in Summer, which is well shaded and keeps from 70° to 85° in the hottest weather in day-time, and lower at night.

O. grande. (Mexico and Guatemala). Bulbs and leaves dark green. Flowers from four to twelve in number, and from four to six inches in diameter; sepals and petals brown and rich yellow, mottled and striped; lip white and purple, blooms in August or September, just after the leaf growth is perfected; keeps in bloom from three to four weeks. There is considerable variety in the size of flowers and marking. Should be grown largely, as it takes but little room.

O. Insleayii. This resembles *O. grande* very much in growth and bloom. It is, however, more graceful. The flowers are smaller; it blooms in December, January, and February. The lip in *O. Insleayii* is yellow, spotted purple.

O. Insleayii leopardinum. This I purchased at one of Young & Elliot's sales. It is much finer, than *O. Insleayii*, and the flowers are larger; petals and sepals yellowish green, with bars and bands of rich reddish brown; lip beautiful bright yellow, bordered by a row of crimson spots.

O. citrosuum. (Guatemala). Large, smooth, light green bulbs and leaves; makes its bloom in the Spring with the young growth; flowers about two inches in diameter, and from eight to twelve on a pendulous stem; flowers white, with purple markings on the lip. There are some varieties in which the flowers are rose and flesh color. It is said to require more heat than most Odontoglots, but it does well with me with the Mexican orchids.

O. nebulosum. I have not bloomed this yet, but it grows well and is making fine bulbs, so it is only a question of time. It is also from Mex-

ico. Flowers come with the young growth and are borne on a pendulous stem. Flowers white in all parts spotted with reddish brown. The bulbs look like a citrosuum but are more wrinkled. Blooms four inches in diameter.

O. Biconense (Guatemala). Blooms in Nov. on an upright spike. Sepals and petals brown; lip lilac and sometimes white.

O. cariniferum. (Central America.) This has long, branching flower stems. Sepals and petals chocolate; lip, white; gets light yellow in a few days. Flowers one and one half inches diameter.

cordatum. (Mexico and Guatemala.) Small bulbs. Sepals and petals yellow barred dark red, lip white with reddish brown markings. There are many varieties of *O. cordatum*, and *O. maculatum* which resembles it in bulbs and growth, and is often sold for it.

O. Rossii. Has very small bulbs and leaves. Flowers on short stems two or three together. Sepals and petals white barred brown; lip pure white or whitish purple. I grow this in broken crocks and moss, and one half dozen plants can be grown in a six inch pot. Blooms from one to three inches in diameter.

O. pulchellum. (Mexico.) Small bulbs. Blooms nearly pure white and fragrant. This also requires a half dozen plants to make a show.

O. Llave, O. Uro Skinneri, O. Cervantesii, and several other Mexican Odontoglots, succeed well with me and are desirable, as they last long in bloom and do not take much room.

O. Alexandræ and its varieties *O. Bluntii* and *O. Andersonii*, come from New Granada. I have bloomed *O. Alexandræ* finely, but lost all my plants in the hot weather. The flowers are borne on half pendant stems, twelve to twenty on a stem; are nearly pure white with sometimes a few brown or red spots on the sepals, petals and lip. There are a great many beautiful varieties. I would be glad to hear of any one who had succeeded well with this most beautiful orchid.

O. gloriosum. (New Granada.) Has long branching flower stems. Flowers about three inches in diameter, white spotted, brownish-red. I bloomed this, but came near losing it last summer.

O. triumphans. Very beautiful short bulbs and dark leaves. Flowers three inches diameter. Sepals and petals golden yellow, spotted crimson brown; lip, white and rose. (New Granada.)

O. vexillarium. (New Granada.) The whole flower soft; rose three inches broad, and from

five to seven on a stem. I do not know if this has been bloomed in this country yet. It is considered in Europe the finest *Odontoglot*.

O. pescatorei. This is another beautiful New Granada plant with white flowers and rosy yellow lips. The flowers are borne on long spikes. This was bloomed by a gentleman in Baltimore whose plant is doing well now.

O. radiatum and *O. luteo purpureum* are beautiful New Granada plants with brown and yellow sepals and petals; lip white with brown markings. There are a great many more species and varieties from South America, but I cannot as yet recommend any from that country as of easy culture; and as I propose these articles for the use of beginners in orchid culture, I can say that I have found the Mexican varieties to grow well. They can bear more sun than the others. This remark applies to all Mexican orchids.

GERANIUM "NEW LIFE."

BY O.

Last week I saw the geranium *New Life* in flower. It is said to be a sport from the *Vesuvius*, which is the most popular geranium in England, both for bedding and marketing, and also as a scarlet for winter-blooming.

"Wonderful," another sport from *Vesuvius*, has semi-double flowers. It will, no doubt, supersede its parent—bearing more persistently than the single varieties, and not sufficiently double to impair its free-blooming qualities.

It is now reported there are two other sports from the same source, a salmon color, and a pure white. A white geranium, flowering as freely as *Vesuvius*, will be an acquisition. It will cause as much of a sensation in England as a white sport from "*Gen. Grant*" would out here.

Vesuvius is offered in the advertising columns of the London gardening papers by individual growers, by the 100,000, at eight shillings per 100—less than two cents apiece—and yet we are told plants are sold cheaper here than they are in England!

According to the wood-cuts which I have seen of *New Life*, it is a sport from "*Harry King*!" a seedling from "*Jean Sisley*," and sent out by Messrs. Standish & Co., Royal Ascot Nurseries, England. The only difference between the "cuts" of each is the stripes. The stripes on the flower are not so conspicuous as they are in the cut, being quite faint and irregular. If the flowers I saw are a fair representation of the whole stock, it is of very little value only as a curiosity.

EDITORIAL NOTES.

LUCULIA GRATISSIMA.—This is a very old but very beautiful plant from Australia, with large heads of *Hydrangea*-like flowers, and which gardeners have always found difficult to keep alive. It is now said in the London *Florist* and *Pomologist*, that this difficulty has originated from too much fear of its tenderness. If treated more roughly—just in fact as we would treat the common *Hydrangea*—it is a grand success. Has any one this plant in American collections?

OAKLAND CEMETERY, SYRACUSE.—We hear that this progressive company intend to build a "Chapel of Roses," modeled after that designed by Mr. Campbell for the Forest Cemetery at Utica.

SCRAPS AND QUERIES.

WATERING SMALL PLANTS.—W.M.G., Niles, Mich., says: "Will you please inform me how you treat thumb pot plants on hot days to keep them from wilting. Watering morning and evening is not sufficient, and it is said that we must not water when the sun shines, neither must we let them wilt, and the same difficulty arises when plants are plunged out of doors."

[The objection against water when the sun shines on the plants is a purely theoretical one, and appears only in the writings of those who have had but little actual experience. You may take our advice, and water whenever the plants need it. The only plan beyond this is in your case to partially shade the plants from the full sun.—ED. G. M.]

CULTURE OF *MEDINELLA MAGNIFICA*.—Mrs. E. B. S. writes: "Will you please give me in the next number of the *GARDENER'S MONTHLY* the name of the plant to which the enclosed leaf belongs and instructions for its care? I hope you will pardon my demand on your time, but I do not know to whom else I can apply, and I thought that as I subscribed to the *MONTHLY* you would be kind enough to answer my questions, and oblige Mrs. E. B. S."

[The plant sent was *Medinella magnifica*. It is a beautiful leaf plant, and those who possess good specimens have a prize. The plant loves warmth, though it can be kept over Winter in a cool greenhouse, or possibly a well warmed room. The pot with the plant will do very well in the open air in Summer.

The lady's letter is published in full, so that we may take occasion to say that such inquiries are always welcome. What one wants to know is generally the want of hundreds of others, and we are very glad to help them in this way.—Ed. G. M.]

BEAUTIFUL CYCLAMENS.—By what we read in the English periodicals, we see how great has been the improvement in Cyclamens; but a sample from Mr. Barker, of Norfolk, Va., shows that they are even more beautifully improved than we supposed. This sample comprises fifteen different shades of color or form. They seem to be a mixture of three species, Cyclamen coum, C. persicum and C. Europæum.

SEEDLING VERBENAS.—G. B., Colora, Mo., sends blooms of a seedling Verbena. It is a soft and agreeable shade of vermilion. There have been so many shades of Verbena introduced of late years since Verbena seed raising has been so common, that we do not feel safe in saying the color is novel, but we may say that it is a very good variety.

VARIEGATED COBCEA SCANDENS.—Specimens from Mr. C. Th. Schuere, florist of Cleveland, O., shows this to be a remarkably beautiful plant. We do not take kindly to many of these variegated-leaved things. They look diseased. This does not, but is bright and live looking. It is a good addition.

FRUIT AND VEGETABLE GARDENING.

COMMUNICATIONS.

PEARS IN GRASS.

BY GODFREY ZIMMERMAN, BUFFALO, N. Y.

The sharp controversy of twenty years ago, on the question, "Can pears be profitably grown for market?" died away without any decided issue. If the same men could again discuss that point, the results, I think, would be far different and of greater value to fruit growers.

The statement that the pear is not well suited to our climate, and will never be abundant in our markets, has proved false; for so large a quantity of this fruit now fills them, that thousands of barrels have to be shipped; an occurrence which was not then thought possible. On the other hand, the notion that "cultivation by constantly working the soil is the only successful way," received a severe shock when the GARDENER'S MONTHLY demonstrated that a profitable cultivation for the pear is better accomplished in a well enriched and frequently-mown grass sod.

It is known that the roots of the quince suffer in light soil, or in cultivated ground. And I have found that injuries in the root cause the pear tree to produce small, curled leaves in the spring. But all our trees, especially dwarf pears, suffer more or less from climatic influences; and so far as these effect the roots, the best treatment is protection by means of a thick sod.

It was found that a large number of the dwarf pear trees, that died in the spring of 1875, were frost killed at the roots, being planted in exposed places or cultivated soil. On my own grounds I found that dwarfs in cultivation, and so protected from the S. W. winds that the snow lodged in them, lived, but a few immediately beyond this protection were killed; while a large lot near these, but six years in grass, did not suffer at all, though in the most exposed place. In fact, not any trees in my orchard (in grass) suffered, though fully exposed to the winds. The crop of pears that year (1875) was large, besides a fair growth of wood. Last year there were an extraordinary yield not only in quantity, but in size and beauty. The average income from dwarfs, in grass, was \$400 per acre, excepting the Vicar, which brought twice that amount, and some B. Clairgeau and B. d' Anjou brought \$12 per bbl. in New York.

Having, during the past season, cultivated a few rows of trees in the center of my dwarf pear orchard, to change the shape of the bed, I found that the blight in these was much more severe than among those in grass. The actual record was as follows:

Louise Bonne,	cultivated,	88 trees	14 blight.
"	"	in grass,	87 " 8 "
Vicar,	cultivated,	12 " 4 "	
"	in grass,	70 " 7 "	

I have not yet succeeded, and do not expect to succeed, in making my trees of uniform beauty; but since they have recovered from the first

shock received by being put in grass, they are improving from year to year, as the fertilizing materials—manure, leaves, rotten grass, and occasional dressing of soil—accumulate on the surface. The expense of manuring, to which many object as more costly than cultivating, does not exceed \$30 per acre, at \$3 per cord delivered in the orchard.

I have many dwarf pear trees over 20 inches in circumference. One Duchess d'Angouleme of 27 inches, 30 years old and 18 years in grass, which produced $6\frac{1}{2}$ bushels of fine fruit last year, besides making a growth of from 6 to 15 inches. Others bearing a light crop, made a growth of twice that length, also in grass. Where irrigation can be applied once or twice during the month of July and August, it will not only improve the crop, but will cause a rich growth of grass under which the quince root cannot be reached by frost. And I do not believe that grafting the pear or quince stock so changes its constitution as to make it a feeble tree. Protect its roots from the extremes of heat and cold; give it enough nourishment to sustain a healthy growth of the top; prevent its tendency to overbear (which seems the only reason for its being weaker than when on its own root), and the dwarf pear will no longer be denounced as unreliable, short-lived, and unfit for cultivation in this climate. I believe if it were so treated, the more vigorous growth of the pear top would induce a larger than natural growth of the quince root; and through this equality live as long as the pear top can be kept in a thriving condition.

DWARF JUNE BERRY.

BY H. A. TERRY, CRESCENT CITY, IOWA.

In your issue for March I notice allusion is made to the action of our State Horticultural Society, in regard to the Dwarf Juneberry being sold by agents for real Huckleberries. I have never known of the Juneberry being sold for Huckleberries; but I must say whoever buys them under that impression will not get cheated, as they are much more valuable to grow on Iowa soil than the real Whortleberry, as the genuine Whortleberry does not flourish in Iowa. This Dwarf Juneberry is an Amelanchier, a native of the Rocky Mountain country, and may have been sometimes called Mountain Huckleberry, as the fruit resembles in size, color, and taste, the genuine eastern Huckleberry. The trees or bushes grow from four to seven feet high, rarely exceeding six feet, and stool out

from the root like the lilac bush, so that at three to five years old there will be six to a dozen trees to one root, which will produce several quarts of fruit every year.

They are very productive, and the fruit is relished by nearly every one. This variety was introduced into Western Iowa, by the writer of this, several years since, and is now well known throughout this region, and is also known to some extent through the Eastern States, and is, I think, highly prized wherever known.

[The regular Juneberry of the East grows to a small tree. We were not aware that there was a dwarf Juneberry of the superior character noted by Mr. Terry.

While we were writing the above paragraph Mr. A. S. Fuller dropped into our office, and he tells us he has had this Western Juneberry under culture sometime, and that it retains in the East the good qualities it possesses in the West.

In New Jersey and some other States are dwarf forms of Amelanchier, but they are so poor in the quality of their fruit in comparison with the larger forms, that we hardly thought of it in connection with the one referred to by the Horticultural Society.—Ed. G. M.]

BLIGHT IN THE PEAR TREE.

BY I. C. WOOD, FISHKILL, N. Y.

Being somewhat interested in the growing of this desirable fruit, both as dwarf and standard, and watching the successes and failures of fruit growers in this vicinity, and having read with much interest the different experiences of fruit growers, as discussed through your valuable journal, I thought, with your consent, I would state a few instances or peculiarities of the blight in this section. One of my neighbors has an orchard of about 200 standard pear trees, from 8 to 10 years set; soil a rich loam, underlaid with coble. The latter is from 3 to 4 feet under. The first 8 or 10 inches is a good loam in which small flattish stone is pretty freely mingled, but after the first 8 or 10 inches it becomes a clean deep loam free from stone. The trees were set about 15 feet apart each way, and head formed 3 to 4 feet high. The ground has been carefully tilled with hoed crops, generally potatoes, but sometimes a part of it has been planted to corn. All have been pretty liberally manured with barnyard manure, and, as a matter of course, the trees have made a splendid growth. The sorts were mostly Bartlett, though some F. Beauty, B. Bose, B. Clairgeau and Vicar were

set. The Bartlett and F. Beauty have borne two or three nice crops, and the fruit was exceptionally fine. In the year 1875 about one-fifth of the orchard was seeded down to clover, and as it became pretty well mixed with weeds, the whole was mown and placed around the trees in the last mentioned one-fifth for a mulch. In the Spring of 1876 the clover came on finely and made a large growth, and getting down early, and the season at that time being pretty dry, he concluded to leave it, thinking to keep the ground cool and moist. The Bartlett and F. Beauty were cropping pretty well at the time, but he noticed instead of the trees in the clover making a fine growth they grew but lightly, and the leaves turned a sickly color like ripening up, while the trees in the cultivated portion of the orchard grew finely. By the middle of August some of the trees in the clover portion showed patches of bark on the stems and larger branches, signs of dying, and turned black, while those standing in the cultivated portion showed no signs of the disease, and have not to this time, but have kept growing right along, and have borne a fine crop the past season, 1877. I should have said the F. Beauty are the only trees that suffered severely. The Beurre Bosc and Bartlett ripened up their leaves early, and made but small growth. Now was this the fire blight, and if so, why did not the F. Beauty in the cultivated portion show it also? Or did a portion of them, in both the cultivated and the sod, receive a slight freezing of the sap the previous Winter and those in the cultivated portion grow out of it; and those in the sod being checked by being robbed of some of the essentials by the crop of clover, and being already weakened by the blight and taxed or deprived by the clover could not throw it off, consequently the disease already seated, and the tree weakened, as before stated, gave way at that time? Now was this the frozen sap blight or was it something else? Would farther say none of the trees died fully, but are slowly recovering.

Another, but still different case. Another neighbor having a fine young orchard of Bartlett, F. Beauty, B. Bosc and Vicar about 8 or 10 years set, and the two former having borne a couple of crops or so—the trees having stood in sod for a few years, and not making satisfactory growth—he decided to plow the orchard, which he did in the Spring of 1877, and planted it to corn. The trees started up and made a nice growth, particularly the F. Beauty and Vicar. The

former set a fair crop of fruit and carried it through finely. Shortly after the first cold snap, say about November 20th, the F. Beauty and Vicar showed signs of dying in part or whole, the larger branches became suddenly shriveled and partly dry. Sometimes the whole head, and again a part of the branches, and occasionally the stem in part or whole gave way, and up to this date the disease continues to make itself manifest; and while the larger branches and main stem become dry in part or whole, the ends of the branches are fresh and apparently healthy. Now, if this was caused by freezing of the sap, when was it frozen? When it was first discovered the freezing had been very light. Or did they receive their check the Winter previous, and being weakened by the crop of fruit and the dry weather, which prevailed at that time, cause them to give way at that late date; and if so why did the Vicar die also, having no fruit to tax it? Did the crop of corn take from the trees what was essential to their lives, and if so, why did not the Bartlett and B. Bosc also die? Trees of the F. Beauty, which matured a bushel or more of fine fruit in 1877, are in some cases now entirely dead.

OUTSIDE GRAPE BORDER.

BY D. G. R., CANANDAIGUA, N. Y.

With your permission I will give a few practical remarks on outside grape borders which will probably suit the enquirer on page 83. Having the management of vineries which produced a fair crop of fruit but poor flavor, I found the cause as I expected, *i. e.*, insufficient drainage and the roots almost all outside in a temperature of 34° two feet below the surface, and covered as you suggested. First, I drained it properly and then added a few feet of inside border. In the past season the result was no shanking and a fair crop. This season they have started strong and regular, look promising, and are now in bloom (12th of March); while at this date of the past year, under the same treatment, a few shoots were nine inches long and many not started. I presume the obvious success is the result of drainage, and the inside border in which the roots have now grown considerably. Temperature at the roots 73°, two feet deep; temperature of outside border 50°. For forcing, from November to March, there can be no doubt of the superiority of the inside border practically.

An outside border may be of benefit when the

roots come into action before the full development of foliage and branches, if after this only useless laterals are produced.

If the outside border is persisted in it should be covered with boards to throw off rain and snow, otherwise the ground will be cooled down beyond the growing degree.

Under the heading of "Seasonable Hints" is the following on pruning the grape vine: "These latter become nothing but long rope-looking apologies for what a vine should be." There is more science in it than advocating training them down a back wall. It is impossible to discuss this article in a few lines.

QUALITY AND CULTURE OF PEARS.

BY GEN. W. H. NOBLE, BRIDGEPORT, CONN.

Some recent notices in the MONTHLY on the quality and culture of pears invite remark. It is plain that the favorites in the garden and nursery need sifting and change, and more rigid tests of merit. When such a fickle and tedious pear as the Buffum is held beside the princely Sheldon, as mutual subjects of undeserved neglect, it is plain that somebody lacks a taste educated by a larger trial of kinds. The editor packs an essay into his pungent counsel for a careful weeding out of lists and new methods in their make-up.

The pith in "Lacon" about saints is very close in point as to pears, that "a good many canonized as saints ought to have been cannonaded, and a large congregation cannonaded ought to have been canonized." Special friends there always will be about this or that taste or texture in a fruit. But that "there is no disputing about tastes," long since laid down as an axiom, only gains that force, when those who dispute know the whole of that wherein they differ. When, therefore, a lover of this or that fruit rates it into the roll of honor, it is in point to ask how much the judge knows about the others, which the promotion of his favorite over-rides and out-laws.

Now, rank in pomology must not be left to whim or caprice. Diplomas of merit should only be granted under the test of strict rules and standards. Otherwise, as many opinions would flash out about a fruit, as wrangled of old over the varied tinges, which from whim or environment, the chameleon wears. A like doughty debate was once held over the birth-place, name and merits of the Pinneo pear, whose worthlessness

dawned upon the world in Eastern Connecticut.

The need of some closer tests of merit in a fruit, and a new deal of kinds, is best shown by an example. There is a pear of the same season as the Buffum (perhaps a little earlier) never yet offered on any regular sale list in this country, yet in every quality of tree and fruit very much its superior. This pear is the Hericart. It is a Belgian pear, as old as Von Mons, perhaps one of his seedlings. None of our fruit books but Elliot's has it rightly placed as to season, tree or fruit. It is nearly as large as a Bartlett, ripens perfectly on the tree or in the house, and does not readily wilt. It is good as a worm-fall, or when picked from the ground at full maturity. It never rots at the core, and is very resistant to decay. Its flesh is buttery, juicy, and of the most delicate aroma. At maturity it is a handsome pear, of a tender, but of yellowish green, sometimes darker on one cheek, with a rosy blush. It bears well every year, and holds fast its fruit. Its tree-growth is fairly vigorous, somewhat struggling and jagged in youth, but shaping into graceful droop with years. It is as hardy as an oak, and thrives when the Bartlett fails and dies. It never mildews or leaf-blight, but holds its rich, green, broad foliage till late, maturing every twig. Yet this pear is never heard of, while the Buffum holds a choice place in every catalogue.

Now, the Buffum, though so much favored, is a very fickle pear. When picked at just the right time, thinned so that each fruit gets full size, carefully laid away in the house, and watched for its exact point of ripening, it is a good, and sometimes a very good pear; but if you delay the picking or the eating beyond that right time, or if when picked it is not favorably placed as to its surroundings, or if it is not a specimen grown large by the sacrifice of its fellows, it is simply good for nothing, not a whit better than the common Harvest pear, Amire Johanette.

The very fact that of these two fruits of the same kind and season, the inferior is so known and cherished, while its superior seems "born to blush unseen, and waste its sweetness," speaks for a new deal in fruits. Some should come to the front, and others should "go away into outer darkness." It proves, too, that one fruit should not be placed high among the choice, and another ignored or banished, except under tests of quality less arbitrary than the individual

vote or taste. The chances for whim or interest to go wrong, even under these, bespeaks the wisdom of some large, well-endowed horticultural garden where kinds of promise should have trial and test. About where that ought to be and how sustained, I shall say more beyond.

In another article some simple rules for fixing the merit of a fruit will be offered, which may do till better are devised.

NOTES ON NEW FRUITS.

BY W. S. CARPENTER, RYE, N. Y.

I send you a few notes in regard to some of the new fruits which I have been testing. *Souvenir du Congress* pear; fruit very large, bright yellow, with a red cheek on the sunny side; quality good, and keeps well. Its large size and fine appearance add to its market value. The tree is a strong grower, comes early into bearing, and produces large crops. It ripens a little before the Bartlett.

Pitmaston Duchess, a seedling of John Pitmaston, of England. A very large handsome pear, nearly of first quality. The tree is a good grower, comes early into bearing, and with me is a better pear in every way than the *Duchess d'Angouleme*; ripens October. *Beurre d'Assomption*; fruit of the largest size, an early and good bearer; yellow and red, very handsome, melting and juicy, not high flavored. Ripens last of July. *Brockworth Park*, a seedling of Mr. Laurence, of Brockworth Park, England. This pear was sent out with high commendations, but with me it is quite worthless. I have several trees of this variety. It is a feeble grower, and the fruit cracks badly. Ripens October. *Louis Vilmorin*; fruit large, color a fine cinnamon russet, flesh fine grained, juicy, perfumed, sweet; promising Winter pear. Ripens January. *Monsieur Heberlin*; tree a strong grower, holding its leaves till killed by the frost, a great bearer; fruit large, yellow, very fine grained, melting, juicy, sweet, slightly vinous. This pear resembles the Bartlett in appearance, ripening from one to two weeks later—September. *Madame André Leroy*, raised by André Leroy, of Angers, France; tree a good grower, fruit large, but cracks badly; October. *President Coupre*, a very large pear, from Belgium; color yellow with a brown cheek. A promising late keeping pear; December. *Compt. Lelieur*, a Belgian pear of large size, looking much like *Onondago*, or *Swan's Orange*; color yellow, very juicy, quite promising. *Chaumontel*

d'Ete, or *Summer Chaumontel*; fruit large, yellow with a fine red cheek, handsome and good quality. A promising Summer pear; August. *St. Therese*, one of Leroy's seedlings, of France; fruit medium, skin yellow and bright red, handsome and very good; ripening in October. *Beurre Ballet Pere*; tree a strong grower, and bears young, fruit large, yellow, handsome, and good; October. *Goodale*; this is a native seedling, and promises to be valuable. The fruit strongly resembles the *Buerre d'Anjou*, but with me it is larger, and nearly as large as that fine pear. The tree is a strong grower and holds its leaves late in the season. It is a great bearer, and I think one of the most promising varieties ripening in October. *Micado*, from Japan. The leaves of this tree are very large and ornamental. Fruit medium, very flat, dark russet color, half melting; ripening October. *Japan*, another variety from that country which promises to be valuable. The tree is very ornamental, leaves large and glossy, and a prodigious bearer. Fruit quite large and nearly round; half melting. Skin a fine golden russet, a beautiful fruit, fine for canning.

For the first time in ten years, the blight has made its appearance, and left its mark on a large number of pear trees. Some only a small limb, others have lost one-half their limbs, and in some instances the whole tree has been destroyed. Some of our old apple orchards, last fall, put on the appearance of a visit from the seven year locust, the leaves on the ends of the limbs from six inches to a foot, turned brown. On examination I could not trace any insect, and concluded that the blight that was destroying our pear trees had attacked the apple trees. This blight was more noticable on some varieties than others. Rhode Island Greenings and Fall Pippins suffered the most.

ON THE USE OF SULPHUR.

BY ———

Great care should be taken by authors in the use of words to convey their meaning, for disastrous results may sometimes follow by using the wrong word, or not sufficiently explaining it so that it may be understood as it is intended.

In a much valued work on grape culture under glass, now lying before me, directions are given for the use of sulphur as a remedy for red spider and mildew, using these words, "There need be no fear of sulphur doing harm to the foliage, so long as *ignition* does not take place;

it may be used with confidence;" and in another place these words are used, "Without being *ignited*;" also in another work it is recommended to scatter sulphur upon the brick flues, but care must taken not to let it *ignite*. Now I do not believe there is any harm intended in the use of the word *ignite*, but I have met intelligent people who have an idea that to *ignite* means to blaze; that sulphur or any other substance is not ignited when it comes in contact with fire unless it blazes. I will cite a case to the point: A wealthy lady of this town sent her gardener to me last Fall to see if I knew of a remedy that would destroy red spider in the hot-grapery. I gave him one in which sulphur was to be used, but cautioned him to use great care and not let it come in contact with fire under any circumstances whatever. I saw no more of him for nearly two weeks, when he came back with a very long face and said that he had done as I had advised him, but it had not destroyed the largest of the red spiders. His employer had been reading in a work on grape culture that sulphur could be used as I have quoted above; so in order to finish up the business, she ordered him to burn a very small quantity to try it, *but he must be very careful not to let it ignite*. Now you see she had been misled into this error by the use of that baneful word *ignite*, and the consequence was the gas or fumes from the burning sulphur destroyed every leaf in both the hot and cold graperies, for she ordered him to treat both houses to this dose. A little while after this happened I went to see those graperies, and I must say that it was about the sorriest sight I ever beheld; every leaf was as brown as a piece of leather. The grapes in the hot grapery had ripened off in very good order (quite a large number of bunches still hanging on the vines) before the igniting process had been applied, and were not much injured, but those in the cold grapery had just begun to color, and, of course, were completely ruined. It was a scene of desolation I do not wish to see very soon again.

There is another case of a neighbor whom I met on the street one day last Fall, and wished I would go with him and tell him what was the matter with his grapery. As soon as I entered the house I thought it looked as if sulphur had been burnt, and asked him if it was not so. He said he had only burnt about as much as would lay on a five-cent piece. He had heard some one say that it was a good plan to burn it, and did

not suppose it would do any harm. He wanted to get rid of those white thrips that were tormenting him so much. I told him that a small quantity of burning sulphur was enough to destroy everything that was green in a house of that size, and if he had used the remedy I gave him in the early part of the season, he would have been all right.

I have written this article to show how easily people may be led astray, and hope it may be the means of saving some one the experience of the two cases cited above; and would say that if sulphur must be used in a grapery or greenhouse, never let it come in contact with fire, for ruin will certainly follow such use of it.

EDITORIAL NOTES.

MAHALEB STOCKS.—A correspondent of the *Rural New Yorker* says: "The Mahaleb stock is peculiarly liable to the attack of a worm at the root, very similar to that infesting the peach tree. Perhaps our entomologists can tell us whether it is the same species."

If there is any insect preying on the Mahaleb stock, it would be worth knowing; but we fancy the insects seen had no connection with the injury. The questions put to the entomologists seem to have been unaccompanied by specimens of the insects.

CRESCENT SEEDLING STRAWBERRY.—Many years ago there was a variety with this name, and some are afraid that the new one will be mistaken for that; but we doubt whether there is a plant of the old sort now in cultivation.

THE PHYLLOXERA.—This little insect is on its travels. At the latest accounts it had reached Australia, and is receiving the attentions of the grape growers there.

THE CHAMPAGNE APPLE.—This has recently been brought to notice by Col. Stichter, of Reading, Pa. It was introduced by Mr. Fehr from Switzerland, fifteen years ago, and grown in his orchard as the "Champagne." Mr. Charles Downing, judging from some specimens sent to him, thinks it is an acquisition, and worthy of trial in other localities; and gives the following as the description:

Fruit of medium size, oblate, slightly angular; skin smooth, almost waxen, pale, whitish yellow, shaded with light red where fully exposed to the sun, and a few scattering brown dots, which are areoled on the colored side; stalk short, small;

cavity rather large, deep, sometimes slightly russeted; calyx closed, segments long, recurved; basin rather small, nearly smooth; flesh white, fine grained, tender, juicy, with a mild, sub-acid, pleasant flavor, slightly aromatic; core small, quality very good.

NEGLECTED ORCHARDS.—The *Country Gentleman* explains that its paragraph, at p. 38, to which we referred in our March number, was not really intended for "neglected" orchards, as stated in the paragraph, but as a covert hit at the theory of culture in grass. This explanation surprises still more than the original statement; for what possible connection there can be between an orchard well cultivated with grass, corn, or potatoes, and one neglected and uncared for, whether "grassy" or otherwise, it is hard to see. We repeat that no sensible man expects to get good fruit from a neglected orchard, whether in Michigan, New York, or anywhere else.

DRYING FRUITS AND VEGETABLES.—The progress made in the art of drying fruits and vegetables has been very great of late years. It does not pay any longer to string apples and peaches like beads, and hang them from the garret window. There are, however, some small machines, such as the American drier, with which any one who wishes to dry his own, can still save the fruit for his own family use, and perhaps save money by not having to buy. But

those who have large quantities to do, and who can make a business of dried fruit, by the expenditure of one or two thousand dollars can put up driers, which, weight for weight, will put fruit on the market at lower rates than the perfect and fresh gathered fruit can be. There is now the Williams, a Michigan invention, and the Alden, both in some respects rivals. We have before us circulars of both, and both have good points, the agents of each, of course, dwell on these separate advantages to such good purpose, that after a careful perusal the reader will be most likely to feel that both are decidedly the best. However, on reading them we have derived the advantage of being more than ever impressed, that the fruit driers in their several inventions deserve well of the community. Only imagine—as the Williams' claims—600 pounds of apples dried in twenty-four hours, at a cost of six and a half cents per pound! We have to pay five cents on our streets for a "twenty ounce" apple weighing less than half a pound.

SCRAPS AND QUERIES.

JAPAN PERSIMMONS.—We have samples of dried persimmons, from James Waters, of Watsonville, California, of about the same good quality as those already noted in these pages.

FORESTRY.

COMMUNICATIONS.

CATALPA WOOD.

BY C. S. S.

The wonderful durability of the wood of the American Catalpa has long been known; but Mr. E. E. Barney, of Dayton, Ohio, has done an excellent work in collecting together several letters written by him at different times to the *Railway Age* in regard to the economical value, especially with reference to the employment, which can be made of it, for railway sleepers. To these letters are added satisfactory evidence of the astonishing durability of the wood of this tree, its adaptability to many useful purposes, besides some excellent suggestions as to the best

methods for cultivating it. The whole forms a neatly printed pamphlet of 26 pages under the title of *Facts and Information in Relation to the Catalpa Tree (Catalpa bignonioides)*, which can be procured from the author.

Mr. Barney calls attention to the fact, which has heretofore escaped our notice, that in some of our Western States a variety of the Catalpa is found in cultivation with very large white blossoms, appearing two weeks earlier and much more abundantly than in the common form. Experiments, too, show that this early blooming variety is of more upright, rapid growth, and considerably hardier, and so more valuable for forest planting; a fact well worth bearing in mind. To all with whom the question of a supply of fence posts is getting to be a serious one, and

especially to the managers and owners of railroads. Mr. Barney's pamphlet will be found useful and instructive reading.

RELATION OF SOIL-TEXTURE TO TIMBER-GROWTH.

BY L. J. TEMPLIN, HUTCHINSON, KAN.

Some time during the past season I read an extract from the pen of one of our savans—Prof. Winchell, I believe, on the above subject, which, if I remember correctly, teaches doctrine at variance with the facts of the case. The position of the professor, as I now remember it, is that the treeless condition of the prairies of the West is caused by the physical condition of the soil composing this part of the country. I understand the article referred to teaches that a very finely pulverized soil is not congenial to tree growth; that a coarse soil, with more or less rocks and gravel, is essential to the growth of timber. The Western prairies being composed of very finely comminuted soil, are uncongenial, and, indeed, detrimental to arboreal growth. Assuming that I have correctly understood and remembered the meaning of the author—for I have not the article now before me, I object to the teaching of the theory for the following reasons: First—a soil of fine texture is not necessarily unfriendly to tree growth. There is no finer soil in the world than some of the clay soils of Indiana and Ohio where timber grows, and has for ages grown luxuriantly. Second—it is not true that all the soils of the prairies is of the fine tilth represented. It is true that a large part of prairie soil is of vegetable origin, and of course this is generally finely comminuted, but there are extensive districts where rocks and gravel abound, and they are yet as destitute of timber as other parts. Portions of Kansas are as rocky as the hills of New England, and yet are without timber. True, in some cases, the summit of rocky hills is crowned with timber, that it is only where the grass grows so scant that the annual fires can never reach them. Third—timber is found growing in ravines, and, especially, on the borders of streams, out of the reach of fire, but where the soil is as fine in texture as can be found anywhere. Fourth—it is not true that timber will not grow in the soil of our prairies. The millions of trees now growing luxuriantly in all the settled portions of the prairies is a sufficient refutation of the assertion. I have been, all my life, familiar with timber growth, having grown up in intimate acquaintance with the

forests of Indiana; but I never saw, in that State, timber grow with the rapidity and luxuriance that it does here, on these vast plains. Seedling trees set at one year old often grow from five to seven feet the first year, and some kinds often make a growth of eight to twelve feet in height, and one to one and one-half inches in diameter, in a single season, after being established. Does this look as though the soil of these prairies is too fine for timber to grow? I think not. Lastly—the soil of the Western prairies is as various and diverse in both physical texture and chemical constituents as that of any other part of our country; therefore, whatever may be the cause of their treeless condition, it is clearly not attributable to the fineness of the soil. The cause of this distinction is, I think, clearly found in the annual burnings that consume the grass and with it all incipient tree growth. That this is the cause is evident from the two following considerations: First—it is abundantly adequate to produce such a result. All over these plains the fires have been accustomed to sweep every year from time immemorial. These fires when driven through the dry grass before a strong breeze such as generally prevails during the season that this burning takes place, are almost resistless. These flames, when going fairly with the wind, often travel with the speed of a race horse, leaping sometimes 100 feet or more at a single bound. No small timber can stand before such fires. A second evidence that this the true explanation of the absence of timber is the fact that, whenever the fires are kept out for a few years a spontaneous growth of timber comes in and takes possession. All over these prairies are straggling shrubs and seedling trees that want only immunity from these destructive fires to spring up and produce groves and forests.

THE EUCALYPTUS IN VIRGINIA.

BY HENY M. WORCESTER, NORFOLK, VA.

I am now prepared to report fully upon the hardness of the Eucalyptus in this latitude.

E. bicolor (though with slight protection of straw and matting) perished the last season—and this is the mildest winter known since 1825 in this section—proving it no more hardy than *E. globulus* and other varieties. I also lost *Cassia fistula* (from Australia), when left out, slightly protected; which leads me to the conclusion that Australian plants and shrubs will not stand out north of Georgia. Our winters are too severe

for them, and the *Eucalyptus globulus* is therefore a fanciful delusion, as far as any benefits our low, flat, swampy and malarious country is to derive from its general culture here, as in Italy.

As a proof of the unusual mildness of the season, I will say I plucked a Louis Phillippe Rose in my garden, in bloom, January 20th, and the same bushes are now set with buds. The Marechal Neil buds look as though a few more days' warm sun would open them.

NORTHERN RANGE OF THE WILLOW OAK.

BY J. STAUFFER, LANCASTER, PA.

In the current number of your journal for April, 1878, page 113, J. M. says: "It would be interesting to know the farthest northern point that the Willow Oak, *Quercus phellos* has been found growing wild." In the spring of 1862, Mr. Hensel, Sr., brought me a branchlet, with leaves on it, of a beautiful large tree, growing in an open field, as he informed me, desiring a name for it, stating where it grew. I considered it the Willow Oak. June 13th, 1864, stopping, with others, on our way to the Susquehanna, at the public house in Martinville, Lancaster Co., Pa., it occurred to me that we were near the locality of said oak. On inquiry, one of the party had seen the tree before, and Professor Porter, then of Franklin College, had given him the name. We walked out a short distance, and sure enough, there stood a vigorous tree, densely covered with its pretty foliage, forming a full round head, about thirty feet high, a veritable *Quercus phellos*. How it came there the oldest inhabitant could not inform us. This brings it somewhat farther north than Philadelphia.

EDITORIAL NOTES.

VALUE OF FAST-GROWING TIMBER.—It is worth noting on how slender foundation generally accepted theories often stand, and it ought to be a lesson not to take all preaching for sound doctrine. We all know how universally accepted, a half century ago, the belief was that rapid-growing timber was good for nothing—only that which grew slow was worth touching. People saw that the Hickory and Oak grew slow, and that the Willow and Poplar, which grew fast, were only fit for the paper mill. But now we find that the

Ailanthus, Catalpa, Osage Orange, Mulberry, and the faster-growing kinds of Oaks, the Blue Gum, and other fast-growing things, are among the best timber trees in the world.

It was the old notion that hard timber grew slow that created such a ghost in the public mind about the disasters to the nation to come from the disappearance of the forests. When timber gets scarce enough to make it profitable to raise more, the enterprising "Yank" will get up a new supply on short notice; and he will not want to send a commissioner to Europe to find out what trees grow fastest in the American climate, but will look to American facts for American people.

THE MASSACHUSETTS PREMIUMS FOR TREE-PLANTING.—The prizes for tree-planting offered by the Massachusetts Society for Promoting Agriculture have closed with thirty-two entries, principally from the eastern part of the State. This competition necessitates the planting, this Spring, fourteen acres with White Pine seed, four acres with Scotch Pine seed, 52,000 White Ash plants, and 30,500 European Larch.

TEA CULTURE IN THE SOUTH.—There is little doubt, from all the facts before us, but the real Chinese Tea plant can be grown well, and the article made cheap enough to have a commercial value in some of the Southern States; and we look for it in time to be as high among staple Southern farm products as sugar or oranges.

THE CATALPA TREE.—Mr. E. E. Barney, of Dayton, O., has collected facts and issued a neat pamphlet in regard to this tree, which we are glad to see, having been among the first to call attention to the great durability of its timber.

DOGWOOD TIMBER.—It is found that the timber of *Cornus florida*, our common Dogwood, is quite equal to Box Wood for some purposes to which, in England, Box Wood has been wholly in use; and there is an annually increasing demand for it on America. Recently one of the American Line steamers from Philadelphia carried out four hundred and fifty logs of it among its cargo; and a number go with many others.

SYCAMORE TIMBER.—The "Sycamore" of English forestry is the *Acer pseudo-platanus*. In this country we call it Sycamore Maple, to avoid confusing it with the Sycamore or Buttonwood. The *Journal of Forestry* says the timber is highly prized in Lancashire for cloth-finishing

rollers in machinery, and is rather scarce. The trunks of four trees, containing only 200 cubic feet, on the estate of the Earl of Wilton, recently sold for \$125, which is considered very high for timber in England.

BIG TREES IN AUSTRALIA.—These do not seem to be confined to Blue Gums. The *Nelson Daily Times* of New Zealand states that a gigantic Black Birch tree was felled recently by a surveyor's party at Staley Creek, near Ahaura. It is stated to have measured fifty-seven feet in circumference at the butt. But this "Black Birch" must not be confounded with the American Black Birch—*Betula rubra*—though that sometimes grows to a very large size.

NOTES ON TREE-PLANTING.—Prof. C. S. Sargent, Director of the Botanic Garden and Arboretum of Harvard University, has issued a very interesting pamphlet on the subject. He remarks on the Red Pine, "Wild Black Cherry"—*Ulmus racemosa*—*Ailanthus*, with minor notes on other timber trees.

BIRNAM WOODS.—Every reader of Shakespeare knows all about Birnam woods, as mentioned in Macbeth. From the *Journal of Forestry* we learn that three of the trees are yet standing—two Oaks and one Plane tree—they being over 1000 years old. Yet they are not extra large for their age. The Oak is 18 feet, and the Plane 19 feet 8 inches.

OAK STAVES.—Louisiana and Mississippi are asking why some Northern men do not come down there and go into the oak stave business, instead of building up these industries in the West, as the Oak is so abundant in these States. It seems a strange question to ask. People generally go where they see other people making money.

COFFEE IN CALIFORNIA.—The Los Angeles *Express* says that Badillo Brothers, of that place, have fruited the genuine Arabian Coffee, but that the success was not proportionate to the labor and expense attending it.

TREES IN NORTH CAROLINA.—The following are the dimensions of some North Carolina trees, as reported from Cherokee county by the Board of Agriculture of that State:

White Oak, 13 feet 4 inches in circumference, and 50 feet to first limb; Yellow Locust, 10 feet circumference, and 60 feet to first limb; Chestnut, 18 feet 6 inches in circumference; Poplar, 11 feet

9 inches in circumference, 70 feet to first limb. Poplar, 11 feet in circumference, 7 feet to first limb. Yellow Locust, 7 feet 7 inches in circumference 45 feet to first limb; Shingle Oak, 11 feet in circumference, 60 feet to first limb; Black Gum, 9 feet 7 inches in circumference, 40 feet to first limb; Hickory, 9 feet in circumference, 50 feet to first limb; Grape Vine at Valley Town, 18 inches in circumference.

THE MAMMOTH TREES OF CALIFORNIA.—Two thousand acres, including the famous mammoth grove of *Sequoia gigantea*, were recently sold at public sale to S. W. Sperry, of Calaveras county, who, it is believed, will take good care of them.

SCRAPS AND QUERIES.

VALUE OF CHERRY TIMBER.—A correspondent asks: "Why do you think the wood of the escaped Garden Cherry is better for cabinet work than that of *C. serotina*?" See G. MONTHLY, p. 144, April No. Have you ever seen the former used? and when and where shown. I am interested in the subject of this Wild Cherry wood, as you have seen, if you have read my last 'Notes,' but I want to get any additional information I can on the subject. So your paragraph at once arrested my attention and causes this inquiry."

[The Wild Cherry, which is indigenous (*Cerasus serotina*), and the Wild Cherry which is an escape from our gardens, are both in abundance in the vicinity of Philadelphia. One is as easy to be obtained as the other. We have since learned that both are used, and both highly esteemed, and in many cases where the wild garden cherry is not to be had, the *Cerasus serotina* is wholly employed.—ED. G. M.]

BLACK OR YELLOW LOCUST.—D. says: "We consulted your book, but could not ascertain from it if *Robinia pseudo-acacia* (Yellow Locust) is the same as White and Black Locust, and if it is only the soil that makes the difference. We find in Bryant's Forest-Tree Culturist, that he claims they are different, but gives them all under the head as above. An early answer will oblige."

[Does any one know of any difference in the wood or location, that gave rise to the distinctive names of Yellow and Black?—ED. G. M.]

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

THE ENGLISH IVY—WILD.

BY B. F. L., PHILADELPHIA.

Some days since, whilst searching for wild flowers, in a forest on the Brandywine, about a half-mile above Wilmington, Del., I discovered the English ivy—*Hedera helix*—growing over the exposed roots and the lower portion of the trunk of a tree, fifteen or twenty years of age. No house, nor barn, nor ruined wall was in sight from the spot where the specimen was found, and I could see no reason why any one should have selected this particular tree and place for setting out the plant.

Had the tree been a beech, and had I found four and a half feet directly above the ivy a pair of monograms sunk with a knife deeply into the bark, and surrounded by symbols, carefully cut, but of mysterious import, I would have strongly suspected the planting to have been the work of man.

The circumstances in this case I think certainly prove that a little bird planted the seed, and that *Hedera helix*, if it has not heretofore been detected away from its proper wall, or garden border, will have hereafter to be classed among the strays. Perhaps some of the readers of the MONTHLY may tell us whether this waywardness is of old or recent date.

CONCERNING TWO SPECIES OF APPLE.

BY HON. WILLARD C. FLAGG, MORO, ILL.

Considering the great economic importance of the apple to the inhabitants of the north temperate zone, I must confess I am disgusted at the small amount of attention it has received from our botanists. The native species of the Old World, even, do not seem to be well studied and characterized, and our New World botanists have probably not improved on this condition of things.

Nevertheless, I wish to bring before your botanical as well as horticultural readers two species that I think should be better known, for the purpose of eliciting such information as may exist concerning them.

OREGON CRAB APPLE.

Pyrus rivularis. Doug. It seems to be figured with the incorrect name of *Pyrus coronaria* in the report of the Department of Agriculture, 1870, p. 414. (See cut, Fig. 1, herewith). Dr. Vasey, in his report on the Forest Trees of the United States, in the report for 1875, describes it as a "small tree, ranging from California northward into Alaska. The fruit is of the size of a cherry, of an agreeable flavor, and used, particularly in Alaska, by the natives of the country for food."

In Washington Territory, according to a pamphlet by Mrs. Stuart (1875), "the Crab apple in many localities forms orchards on the prairies. Its presence is an indication of good soil. The wood is hard and tough, and the fruit well flavored."

Has this tree been fruited or planted on this side of the Rocky Mountains? Has the closeness of its relationship to other species of the apple been tested by budding or grafting one upon the other? Has it more hardness than other species in endurance of cold, &c.? Does it promise by such a process of amelioration as the Siberian Crab is now going through to become a valuable fruit?

Leaving these questions to get answered, I would next ask for information concerning the

OHIA.

Lindley, in his Vegetable Kingdom, mentions an indigenous and solitary species of apple as found in the Sandwich Islands. James, in his history of the Sandwich Islands, mentions among the indigenous and plentiful fruits "the Ohia juicy and red, but of poor flavor." Whitney, in his Hawaiian Guide Book (Honolulu, 1875), describes

THE LARGEST APPLE ORCHARD IN THE WORLD.

"The wilderness of Koolan, Maui, contains a forest of *Ohias* (native wild apple trees) countless in number, stretching from the sea far up the mountain sides. The trees vary from forty to fifty feet in height, and in the harvest season, from July to September, are covered with fruit, some white, but mostly red. We passed through the forest when the trees were loaded with ripe and ripening apples. What a sight! For miles around us, up the mountain and toward the seashore, was one vast grove of Ohias, literally red

with ripe fruit, their branches bending to the ground with the bounteous harvest. Birds of gorgeous colors of mingled red, blue, green, yellow and black, were feasting in countless numbers, and making the forest ring with happy choruses. The crop of these orchards which nature has planted so generously in this wild

fig 1

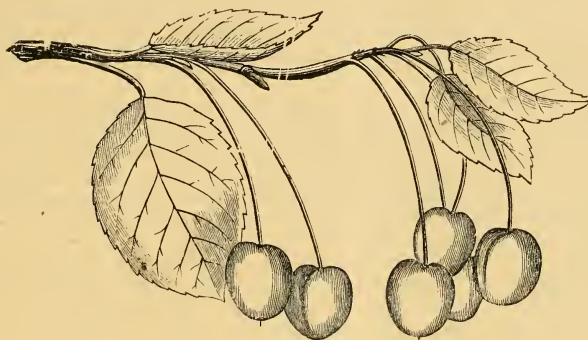


Fig. 2



pearing both thirst and hunger. So far as is bear at least fifty barrels [bushels?] apiece. The fruit furnishes the traveler excellent repast, ap- nature has planted so generously in this wild

now known no commercial use can be made of the Ohio, as when ripe it cannot be kept more than four days."

Who can tell us something of this apple? I have not been able to ascertain its botanical name, nor to learn whether it be a true apple. Have any of our Southern California horticulturists experimented with it? It is possible that for the extreme Southern States here is something worth a trial.

[This article possesses a melancholy interest in being, perhaps, the last literary production of our friend, who died on the 30th of March, it having been received by us a little while before. There was nothing to indicate any fear of losing him beyond the line, "Haven't felt well enough to write a letter, or I should have written," in a brief note with the article.

The upper figure in the engraving is the *Pyrus*.—Ed. G. M.]

EDITORIAL NOTES.

AN ARBORETUM AT NASHVILLE.—By the *Nashville Daily American* of March 26th, we learn that the Vanderbilt University has decided to plant a complete arboretum on the grounds. They have started with two hundred and fifty species of deciduous trees and shrubs, contributed by a member of the American Association for the advancement of Science, which body held its annual session there last year.

THE VEGETATIVE AND REPRODUCTIVE FORCES.—The Seeding of *Wistaria sinensis* is a subject full of interest for the vegetable physiologist, and especially for the Darwinist. At the last meeting of the Linnean Society a paper from Mr. T. Meehan was communicated by the Rev. G. Henslow, "On the Laws governing the Production of Seed in *Wistaria sinensis*." The author alludes to the fact that the *Wistaria*, when supported, grows amazingly, but is seedless; on the contrary, the self-supporting so-called "tree *Wistarias*," produce seeds abundantly. These cases illustrate the difference between vegetative and reproductive force. They are not antagonistic, but supplement each other. While *Wistaria* flowers freely without seeding, it has been supposed this arises from the bees not cross fertilizing. Mr. Meehan submits data, however, in which he thinks the question lies

rather in the harmonious relation between the two above nutritive powers than with insect pollenization.—*Gardeners' Magazine*.

HILLS OF PENNSYLVANIA.—By the Proceedings of the American Philosophical Society for 1877, we find that the highest land in Indiana county, Pa., is on the divide between the Allegheny and Susquehanna rivers, and is put down as 1999 feet.

MARCH WEATHER AT SARATOGA, N. Y.—By the record at Terwilliger's greenhouses, it appears that the warmest day was 64°, the coldest 8° above zero, and the average for the month 38°—variety enough to please the most fastidious.

SCRAPS AND QUERIES.

THE ENGLISH SPARROW.—M. C., Fort Dodge, Iowa, writes: "I see by the public papers that you are having an excitement about the English sparrow, and are trying to make laws to drive him out. Some of our people are anxious to get the bird to our western towns, but I hope you will give them a word of warning as to the folly of the thing from your Philadelphia experience. I have just had a word of warning from a reliable Englishman. He tells me that since the introduction of the sparrow to the English dominions it has driven out all the other singing birds. That at one time England was the home of the sky-lark, the nightingale, the goldfinch, the thrush, blackbird, and many sweet singers, but that they have all taken their flight across the straits of Dover, and that there is hardly a bird left but the sparrow in all England. He says that the grape was once a great product of England, and wine was made there equal to the best in France, but the introduction of the sparrows has effectually killed the wine trade. The apple and the pear tree never fruit any more, since these rascallions eat out all the blossom buds, and that thousands of orchards in the old cider-making districts have had to be cut down for fire wood, as never an apple do they bear any more. He says that whole flocks of the good old-fashioned song birds may be seen any day collecting at Dover to fly across to France to get out of the way of those pugnacious sparrows, and leave forever their native land. The grain crops, he

says, suffer like fruit—at least half the product going to these feathered robbers; and when he left the Old Country they were about getting an act of parliament, a sort of legislation I suppose, to reimburse the farmers for the loss through the English government having introduced the bird. He is sure that the scarcity of bread-stuffs in England is from the prevalence of the sparrow, which are as thick there as the sands of the sea, and he thinks that the bird must have been sent over here by some enemy of our country, who was jealous of our sending so much bread-stuff to England. Now, Mr. Editor, surely a word to the wise is sufficient; and if you are going to expel the wretch from Philadelphia, don't let him come here."

[All this is news to us in Philadelphia. That reliable Englishman would make a good war correspondent in the next fight between Russia and England. We will only speak for Philadelphia, that she grows as many apples and pears as she ever did. Our own pear and apple trees bear abundantly, and swarm with sparrows. There were no insectivorous birds in Philadelphia before the sparrows came, and therefore, insects abounded. It was because they abounded that the sparrow was introduced. Since they came here the measuring caterpillar does not exist. They do not care greatly for caterpillars, but they have a great love for the moths which lay the eggs, and that suits Philadelphians just as well. As for there being any excitement in Philadelphia, we have not heard of it. There are, of course, some who, like our correspondent, listen to "reliable reports" of others, and who can readily trace the apparition of their great-grandparents in an old tree stump by night, who think the sparrows are dreadful things. But such people always will have an existence. As to the sparrow itself, it is certainly not an unmixed good, and it will, therefore, get friends and enemies, just as people happen to look at its work in relation to their own desires.—ED. G. M.]

A CHRISTMAS FLOWER.—Reader, Burlington, N. J., writes: "Having noticed the following article in different papers, copied from the *Easton Free Press*: Last year we made mention of a curious plant which John Atwalt had in his garden. On Christmas eve, true to its nature, the 'Christa watzel' was up out of the frozen ground; and between 12 and 2 o'clock Christmas morning it bloomed. To-day (April

8th) it has disappeared and there is no trace of it left." Can you give any information on the subject? I can find nothing of it in any of the works on Botany.—Please answer through the columns of the GARDENER'S MONTHLY next month and oblige."

[We are not sufficiently versed in the German vernacular names of plants to identify this for our correspondent,—but the account reads very much as if the plant might be the Black Hellebore which is called *Schwarze Christwurz* in Germany. The German family name of the Hellebore is *Neisswurz*. In England it is known as Christmas Rose. It is generally in flower about Christmas, and continues to send up flowers till March, when it ceases to bloom.—ED. G. M.]

BOTANICAL NAMES OF THE SWEET POTATO.—In our last we gave *Convolvulus Batatas*, as the name of the Sweet Potato. *Convolvulus* and *Ipomoea* have many points in common, and some botanists confuse them. But this species is properly related to the last, and should strictly be *Ipomoea*—not *Convolvulus Batatas*.

IMATOPHYLLUM.—"Plausible and amusing as is the theory," says a correspondent, "that this name began as *Himantophyllum*, and dropped its *H* in London, the reverse happens to be true. It began in the *Botanical Magazine*, in 1828, as *Imatophyllum*, and got its *H*, also the *n* in its middle, in Germany, from Sprengel, sometime afterwards. The *n* was put in for a very good reason, and one that goes against your Cuyahoga correspondent's surmise. The name is said, in the *Botanical Magazine*, to have the first part from 'ἵμας, ἱματός, a thong or strap.' Now, ἱματός does not make its genitive ἱματος, but ἱμαντός, in our letters *imantos*, or with the aspirate which belongs to it, *himantos*. As to the dropping of the *H* in London, the editor of the MONTHLY is aware that though usually dropped in 'Olborn' and 'Ighgate,' it is picked up at Hepping and 'Hessex,' and many other places around London."

INSECTIVOROUS PLANTS.—Miss M. M. writes: I have just finished Darwin's *Insectivorous Plants* and see in *Field and Forest* for November, that C. de Candolle has been investigating the structures and movements of the leaves of *Dionea muscipula* with the following results: The absorption of animal matters is no direct advantage to the leaves, and not necessary for the development of the plant.

2. The marginal appendages and edge of the

leaf are distinct from the remainder of the leaf and their motion is not simultaneous with that of the "clappers."

3. The stellate hairs and glands are developed from the epidermis, but the sensitive hairs from the sub-epidermal tissues.

4. Stomata exist on both sides of the leaf, but only on the under sides of the "clappers."

5. The structures and developments of the leaves suggest the hypothesis that the movements of the "clappers" are due to variable turgescence (absorptions of sap) on upper parenchymal surface alone.

6. Sensitive hairs are the active organs that convey the impulse of irritation direct to the sub-epidermal tissues.—*Bot. Zeitung*, Oct. 1877.

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

POST OFFICE LAWS.

BY ELIHU HALL, ATHENS, ILL.

Since it turns out that our members of Congress pass laws that are liable to be evaded by their dishonest constituents (judging us, of course, by themselves), taking this, the most charitable view of the situation, for we do not want to believe they are influenced by the express companies' money, I would suggest that you originate in your journal a petition to the honest members of Congress, to be signed by postal card, addressed to you, and by you presented to the cleverest member you know of, for the law to be so changed as to not admit of a construction that excludes from the benefits of the office Agriculturists, Horticulturists, Seedsmen, and Scientists, in the transmission of their products. The principle feature of the petition to be that parcels of plants, seeds, specimens in natural history, &c., may be sent through the mails at the rate now fixed by law, with labels or tickets, printed or written, securely tied to secure safety in transmission, subject only to inspection at the delivery office by the sender paying three cents additional to the amount required by law. This would be a boon to thousands of us who do not care so much about saving a penny as we do about losing a pound, and certainly ought to save us from suspicion of stealing our messages through, when we could send them on a postal card. This, it is true, would be an additional burden imposed upon this large class of respectable (except in certain high law-making quarters) citizens. Yet I believe that all who are prescribed by the ground constructions and rulings in the law, from the use of the mails at all, would gladly welcome this additional tax on their business than be deprived wholly of its benefits; and

let us all pray that the time may come when writing on the wrapper of a parcel of seeds, the word "seeds" shall not subject the whole to letter postage. What a terrible offence to somebody that must be! Were any other people but ourselves ever guilty of such ridiculous absurdity?

THE WEeping WILLOW IN NEW ENGLAND.

BY WILLIAM NISBETT, PROVIDENCE, R. I.

In a recent number of the MONTHLY, you made inquiry concerning the introduction of the Weeping Willow into New England, and also about the Napoleon Willow, introduced by Capt. Jacob Smith, into Rhode Island.

It was in the year 1826 that Captain Smith, who had touched at St. Helena on his homeward voyage from the East Indies, presented a plant of Weeping Willow to a gentleman of this city, (the late well known and much respected Thomas P. Ives, Esq.), who had it planted in his garden. It was a slip taken from the tree, growing over Napoleon's grave in that island, which the Captain planted and brought home in a nail keg. This I learned from the person who set out the tree. I saw this tree, for the first time, in 1844. It was then a vigorous and shapely tree, the parent of a numerous progeny, and an object of no small interest.

In the month of December, 1866, it fell to me as gardener, to take down this notable tree. It had become much decayed, and was in danger of being blown down at any time, to the damage of surrounding objects.

When prostrate, the trunk presented a singular spectacle. The interior for many feet from the ground was completely rotten. Much of this decayed mass had become genuine vegetable mould. Into this, the tree in its efforts to live, had sent numerous rootlets. One of these was

seven or eight feet long, thicker than a hoe handle, penetrating and rooting firmly in the ground.

The tree, two feet from the ground, was thirteen feet in circumference, about sixty-five feet in height. The expanse of branches was also about sixty-five feet.

For aught I know; Captain Smith may have introduced other trees besides this one, but I never heard of any other.

The Napoleon Willow was introduced into Britain in 1823. In Loudon's *Hortus Britannicus*, published in 1830, it is put down as a distinct species (*Salix Napoleonica*) and as an ever-green house plant or tree! But coming from a tropical island, and being then but comparatively of recent introduction, this is not much to be wondered at. Before the above period (1830), my father planted a specimen of it in the gardens he had charge of, in the south of Scotland, which I think Mr. Loudon must have seen hardy and thriving, the following year, when he visited the gardens in his tour throughout the country "taking notes." I remember him well, and the sensation he used to make amongst the gardeners upon such occasions. But withal, he was a worthy and a talented man—a great friend of gardeners and gardening.

The Napoleon Willow is now, I believe, very generally considered merely a variety of the old Weeping Willow, *Salix Babylonica*, introduced into England in 1692 from the Levant. Travelers say it still adorns the banks of the Euphrates, as in the days of Daniel and the captivity of Judah, when it was immortalized in the language of one of the most beautiful and pathetic of the inspired Psalms.

I am not sure whether the Weeping Willow is indigenous to St. Helena or not, but incline to believe it was introduced to the Island from England during the latter half of the last century, when a great variety of all sorts of trees and shrubs were introduced, including even Furze and Scotch pine, for fuel and also protection in exposed situations. I was well acquainted with a person who could have easily informed me, and have often felt sorry I never inquired of him concerning the Napoleon Willow. This was Mr. William Thomson, with whom I worked many a day, some forty odd years ago, in Messrs. Dickson & Co.'s nursery, Edinburgh. He spent a number of years as a soldier on the island, and having been brought up to gardening before joining the army, he was detailed to look after the grounds around Long-

wood house, the abode of Napoleon during his exile. These grounds he said were nothing very extra, consisting of some sort of a lawn, with walks, some trees, shrubs and a few flowers. Mr. Thomson could tell much about the island, its productions and the exiled Emperor, whom it would appear, manifested but very little interest in gardening affairs (as indeed it could not be expected he should in his then situation;) walking, however, much around the grounds, and often at a quick pace, seldom meeting or speaking to any one, being seemingly always absorbed in deep thought. When Napoleon's remains were removed to France, many years ago, I remember Mr. Loudon considered the Willow that grew over his grave an object of sufficient interest to cause him to apply to the Government to have it properly cared for.

As to the introduction of the Weeping or Babylonian Willow into New England, from all I can learn or judge of, I think it must have been introduced in Colonial times. Large and very old specimens abound in many places. The common yellow branched or Golden Willow, *Salix vitellina*, the Hawthorn, the Lilac, the Sweet Briar or Eglantine, and even the Barberry and many other trees, shrubs and plants, undoubtedly were very early introduced from old England. The largest Hawthorn tree, I think, I ever saw, was growing and thriving in this city a few years ago. It had to be cut down to make way for a new street. It must have been, judging by its appearance, nearly two hundred years old. In fact the early settlers of New England with true English instinct, appear to have had much more taste for gardening and love of Nature than is generally supposed. Endeavoring to introduce whatever was useful, familiar and loved by them at home, or that would remind them of the old ancestral land. Many of these are now found in a wild state all over the country, making it difficult to determine whether they are indigenous or not.

But I must stop this. I have digressed and transgressed enough. I am happy to see the MONTHLY improving and growing. I have taken it from the beginning, and could not do without it now by any means. There is always something in it for the novice and the proficient, the amateur and the professional, the simple and the scientific. I hope you will continue to give us a few more of your European notes. They are vastly more valuable than many people's notes these hard times. What has become of

your correspondent Mr. Harding, who used to give us such interesting and valuable accounts of his travels in Australia, &c.? I should like to see some more of the same from him again. [We have one from Mr. H. to appear soon. Ed.]

EDITORIAL NOTES.

EUROPEAN NOTES, BY THE EDITOR.—No. 9.—While on the subject of public parks, it may be as well to cross the English Channel, and look at some of the French ones, though we shall have to come back to Old England for other matters before we return to America. We have to cross the sea to get to France, as most of the readers know, and as I like the sea I naturally chose the longest way of going across. I may say I love the sea. She and I were always bosom friends. Once when in the darkness around me, I had to swim for life on her broad waters, with no knowledge of the compass points, and I was as likely to go away as toward the shore, she brought me though insensible to land; and on another occasion, when in the cabin and our vessel sunk to the bottom, she kindly helped me out of my little prison, and favored me over other unfortunates in aiding me to swim to shore. There are few things so sweet to me as to be rocked to sleep by my good old friend; so instead of the hour or so required for a toss over the Straits of Dover. I got on a steamboat at New Haven about dark, went at once to my berth, and, after a sound sleep, woke at eight o'clock next morning to find the boat at Dieppe, in France. But I must skip some days of observations in the fields and forests, gardens and orchards, and go at once to my task of describing the public gardens of Paris. I have been told, and no doubt the reader has often been told, that Paris is France; but I can say that whoever takes this saying in an universal sense, will miss something if he does not see France for himself as well as Paris. Most travelers make a fatal mistake here. They go to a few large cities, or to some special points, as perhaps picture galleries, churches, nurseries, and the public gardens, the grand stores, the Boulevards and the Royal Palaces, and they have "seen France." But the France of the guide books and guides in general, is very different from France as one may find it if he will only use his own judgment and go poking about for himself. He may find at first, as I did, that the French language he thought he knew, may do to make himself fairly under-

stood, but it will take a few days to understand the rapid, lightning-like sounds you hear in reply to your questions. Still it is well worth trying by one who wants to see France. It is probable that the reason why foreigners keep to the large cities is on account of the difficulties of the language. In all the large cities people who speak English are common. It is remarkable that so few English people though so near France know French. Once our train stopped for some reason some fifteen minutes in a long, dark tunnel. It was not long before noisy shouts and jokes came out all along the line from the numerous coaches forming the train, but not a word of French did I hear. I suppose this "Who's afraid?" way of shouting, under these circumstances, is not a French characteristic. However it showed me there were many English people on the train, but, though for some reason we were detained at our journey's end, and I had a chance to mix with this crowd of English-speaking people, I did not find one who knew French. Such people cannot see France.

As to the Public Gardens of Paris, a beautiful little one is that called the garden of the city of Paris, in the Rue d'Anjou. It is well worth visiting by those who wish to see how beautiful a little piece of ground can be made. The spot was the place where Louis XVI and Marie Antoinette were beheaded and buried during the Revolutionary troubles. The bodies were afterwards removed to the Cathedral of St. Denis, and a memorial chapel built by Louis XVIII on the ground, and the little plot about it laid out for the public. Immediately around the building the ground is arranged in parallelograms, well in accord with the style, and the only plants used in the decorations are green grass, borders of evergreen ivy, box edging, and standard roses, which come from among the trailing ivy up to three or four feet from the ground, and furnish all the sweet flowers that tell the bees the story of the dead.

The little square forms the entrance, as it were, to the Memorial Grounds. The peculiar feature of the landscape gardening is the raising and lowering of the ground so as to produce an undulating surface, on what would otherwise be naturally a level piece of ground. It requires an immense amount of true art to conceal the fact that these undulations were made by the hand of man, yet it is just here that the art is successful. It strikes the eye as a naturally rolling piece of ground, and which man has simply pol-

ished and put in order. In such a small place all the room possible is required, hence very little planting had to be indulged in, and the effect is obtained by very thick masses of shrubs, judiciously placed. They have, of course, an advantage in this sort of work over us in the kind of plants they can use. These masses were of Aucubas, Hollies, Privet, Euonymus, Yews and similar things which are not suitable to our gardens, and we have no substitutes. The most common trees in the little park were the Plane and the false Plane or Sycamore Maple, Horse Chestnuts, and I was pleased to note a very pretty specimen of our own Kentucky Coffee-tree—pleased because our American trees are astonishingly rare in these foreign countries. I will digress a little here to say that there is a great exception to this in the Yellow Locust or "Acacia," as they call it here. It is all over France, and grows with a luxuriance and blooms with a beauty we never see in our own land. It was a new instance of a fact not new, that nature does not arrange things over the earth for their own good so far as vigorous growth may be to their good, though it is, doubtless, to the ultimate good of these respective races, that they grow where they are found.

The leading streets of Paris are in a measure public gardens, by the care taken of their street trees. That is to say in their leading or wide streets, known as Boulevards. These trees are generally the Plane or Sycamore, or Buttonwood, as our people would say. They are set three feet from the curb, which prevents destruction by horses. The pavements are of broad flag stones, under which trees would not grow in ordinary cases; but here they have a circle of six feet wide exposed around each tree, but covered with an iron grating, so that the rain can get in, and the roots come up to have the advantage of the air. Men are employed to water the trees during the Summer season, small hose on wheels are drawn about and the nozzle applied to the circle at evening when the trees are watered. I was told in Paris that it cost the city about \$16 a tree a year to look after them. It seemed to me a great price, and I still do not think my informant can have had the figures right; but they certainly do cost something, and deservedly so, for these streets would be nothing without them, and I am sure the Parisians would not lose them for double the cost. We have heard a great deal about the wonderfully large trees they move in Paris, and the delicate

machinery used in the operations. I took the trouble to hunt up some of these famous illustrations and found they were, as a rule, not half the size of the large trees which are continually being moved about Germantown, and perhaps near large American cities generally, at not a tithe of the expense, and I was forced to the conclusion, that though in a great many old arts in gardening we are a long way behind the French, in the art of moving large trees, they might take good lessons from us instead of our learning from them.

In the gardens of the Tuileries a large number of these trees had been moved last year, and the expense of the machinery was heavy. A gardener told me the cost was near 200 francs per tree or about \$40 of our money, which would be heavy even for us. I sought out the largest, which was only twenty-four inches round, most of them only fifteen inches. These were chiefly of Horsechestnut and Elm trees, not at all hard to transplant, and men were then in the early part of July daily watering them. The Elms of the public parks of Chicago, moved under Mr. Cleveland's direction, would astonish the French gardeners. The gardens of the Tuileries were not up to the idea I had formed of them. The most striking feature, and this in contrast with English, and still more American gardening, was the great number of men employed in doing a very little work. The flower beds are frequently watered, and this, of course, cakes the ground a little. Early in the morning, before the watering, men are employed cracking the ground with finger and thumb, breaking up the surface. Around the grounds are huge orange trees in tubs, brought annually from Versailles, and two men to a tree were employed in pruning and picking the leaves so that one tree did not extend an inch more out of line than another. Under this pruning and pinching system the gardener in charge informed me they never bore fruit, plenty of flowers being the only aim. They were then being syringed with tobacco water, to keep down insects. It shows that even in these favored regions, as we suppose, it is only hard labor that keeps down insects and disease.

The Luxembourg Palace gardens are, on the whole, more interesting than those of the Tuileries. Sunk gardens, grass, and box-edging are brought into good company with architectural ornaments, which abound. Our Virginian creeper is more used in these gardens than I have seen anywhere. In some cases it is led from tree to

tree along straight avenues, sweeping down to the ground and up again, making a living drapery of wreaths and festoons in connection with vases and statues, that was particularly pleasing. A leading feature of the Luxembourg gardens is the statuary, all in historic connection with events in French history. There is St. Genevieve, the Saint Patroness of Paris, her hair, though braided, extending to within a foot of her toes; and with such beautiful features that, if a true representative of the lady, an artist might have canonized her for her beauty alone; though the Holy See had neglected to reward her virtues. Then there is Marie Stuart, "Reine de France 1549-1587"—as the inscription tells us—and many other celebrities, especially of the female sex. The Pillar Roses, trained to iron rods and arches, were particularly good; but the Pear trees, of which we had heard so much in the past, were yellowish to my eyes, and not near equal to the good looks of the Pear trees of our own country. On inquiring for M. Hardy, in the hope of a good old French Pear talk, we found, as in so many cases in our travels, nothing but the name and memory remained. He also had passed away.

We must pass the Champs d' Elysees, the Bois du Boulogne, Bois de Vincennes, Versailles, and other places, to have a special notice of one very particularly pretty spot—the Parc Monceaux. It is rather hard for a stranger to find, though not far from the beautiful Boulevards. I think I inquired a half dozen times in a walk of half a mile; for the fondness of a Frenchman for a long name, and the way he rattles it off for you is "a caution." So as to be near the great center of these parks, I had taken up my residence at the "Hotel de la ville de Paris, Place Lavalavec, Rue Cambaceres;" but a Frenchman would get this out in less time than you could say "nonsense." But we keep on in faith, and find at last, by an unpretending iron gate, that our kind directors had told us to "keep on to avenue Velasquez." Said avenue is but a few hundred feet long, but it lands us at once into the pretty *morceau* of landscape gardening, the Parc Monceaux. The superintendent, loaded down with medals which made a perfect showcase of his breast, we found, as in England, apparently delighted with the word "American," and kindly gave me all the information I desired. The Park contained, according to his statement, "neuf hectares." I should judge, by appearances, about twenty acres. But the art I have before referred to, of throwing up and depressing the

surface, made it appear very much larger. In fact I do not know that I have ever seen in the world the art of making a small place look large, carried out better than here. Prepared as I was for this art, and certain that I could not be deceived, I was somewhat astonished to find, on crossing a rustic bridge of not over fifty feet long, I was on a popular drive along which I had walked a half hour before, and within reach of which by a stone's throw I had been all the while. Yet, by judicious planting and elevating the earth here and there, views are so arranged that you continually see something fresh. Art is strained to the utmost to bring in this continual variety. Of course, some of these efforts fail. There are some views intended to represent some old Grecian buildings of three thousand years ago. The work is very natural. It is precisely as we see it in pictures. The evergreen ivy has covered the whole, and done its part well. Still you don't believe in its antiquity. You miss the Date Palms. The tumbled columns are not there. You could not, under the wildest stretch of the imagination, believe yourself to be "Marius sitting among the ruins of Carthage;" not even can you think Carthage has been brought there for you. Even the masses of the classical Acanthus growing near the wall, as naturally as it grew in the first instance on the fair maidens' Grecian grave, does not deceive. You mutter, "Pretty, but humbug," and pass on.

But there is enough in genuine art here to please even the critical. There seems nothing at least untried. Imagine a clump of *crooked* trees—large trees—and then you come to another ground where they are mostly straight; groups of our Yuccas among rocks, and masses of our variegated Negundo on a closely shaven lawn. So we go on in variety—now a lot of India Rubber trees—then a bed of our garden Egg Plants—and pretty indeed their leaves did look—and perhaps next a bed of common Petunias. Perhaps it may be a group of the rare but beautiful leaf plant Carolina princeps—scarce Begonias; and then perhaps the common Ivy or Spiderwort. Nothing is too common, but it is turned to excellent use; nothing is too rare to give richness and character. It is indeed a model park.

I thought I would finish here, and get back to England; but one who was with me says, "The flower markets and the artisans' windows are public gardens—the Champ de Mars, with its Exposition Grounds are public gardens—the Botanic

Gardens are public gardens—tell something of what we saw of these.” But I cannot tell much in a few letters at any rate. I might as well stop as continue with so little; but to please her I will go on with at least one more: and if, gentle reader, you are in haste to get this out of the way, so as to be ready for planting your potatoes and beans, please don’t blame me for detaining you.

THAT FRAUDULENT AGENT.—The *Country Gentleman* has the following from a correspondent: “I have read the item headed *Swindling Officers*, in your paper of Feb. 21st. I have no doubt the person of whom complaint was sent you is the same one that was operating for you (in his own behalf) last Spring. He has been at work in this section for over a year, and has no doubt fraudulently collected several thousand dollars. He has thousands of victims. The *Country Gentleman*, *Germantown Telegraph*, *Gardener’s Monthly*, *American Agriculturist* and the *Farm Journal*, all received his attention, besides nearly all the seedsmen, of whom he was ‘cousin’ or ‘brother.’ The fellow is now in limbo, and at the hearing, the court-house appeared to be full of witnesses against him. He was held on nine charges in \$300 each.”

By the efforts of the publisher of the *GARDENER’S MONTHLY* this fellow was caught, but it appeared on the trial by the statements of persons in court that this man has been perhaps all his life engaged at his *business*. There were a quantity of foolish young girls to all of whom he was engaged to be married, and one, whom he married, was in the vicinity. How many more in other parts of the country is not known. A large number of photographs of probable victims were found in his possession. It seemed hard to the publisher of the *GARDENER’S MONTHLY* that no effort but his own should be made to bring such a consummate scoundrel to justice, but the result shows the wisdom of the “parties of the other part.” All his efforts simply resulted in sending this gentleman to pretty fair board and accommodations at the public expense for sixty days, after which he will have liberty to go on again with his swindles. It would have been cheaper, and have done just as much good to have paid the rascal’s board for sixty days than to have gone to the trouble of catching him and the annoyance of prosecution. Justice of this sort is an outrageous farce, and in future those who choose to give money to strangers under pretense that they are collecting for the *GARDENER’S MONTHLY*,

must do their own prosecuting. If Mr. “C. E. Price” is to live decently at the public expense, he may as well do it without all this fuss and trouble to so little purpose. If such fellows were set for a year or two to break stones to mend turnpikes instead of being confined for a few days in a cozy, comfortable parlor with a Bible to read, and a kind prison agent to visit and talk to them about the “enormity of their offences,” and such like stuff, which has as much hold on their consciences as water on a duck’s back, there would be fewer of these fellows outside to plunder the unwary. As he will be out about the last of May, let the Delaware people take him, and give him a share of that State’s attention.

BALTIMORE PARK COMMISSION.—ANNUAL REPORT FOR 1877.—This interesting document shows how much can be done by system. All the parks of the city are under one commission, and one engineer. Mr. Fauls, at a salary of \$2,000 a year, superintends them all. The total cost of all these parks for the year was but \$286,000. The cost of the great Druid Hill park was about \$106,000. The number of visitors was 913,000. Thus we see that this beautiful park cost ten cents per head to each visitor, and we venture to say that there is no visitor who would have thought double that sum too great for the pleasure the trip afforded him. As much of the expense is for construction, which will stop some day, and nothing but maintenance remain, while the number of visitors will annually increase, we can understand why public parks are so popular. They are the cheapest of all public gratifications.

HORTICULTURE AT THE PARIS EXPOSITION.—We have been officially informed that beside the exhibit of capsules, seed vessels, seeds, &c., representing the forestry and horticulture of America, made by Thomas Meehan, the only other representation of American horticulture at Paris, will be the Iowa State Horticultural Society, which will exhibit the beautiful models of apples made by it for Col. Brackett, and which we feel sure will attract marked attention. They will give a better idea than has ever before prevailed in Europe of the wonderful beauty of American apples.

MASSACHUSETTS HORTICULTURAL SOCIETY.—Premium list for 1878, from the Secretary, Mr. Robert Manning. \$4,575, and are appropriated. Liberal premiums are offered for essays on various Horticultural subjects.

DOUBLE AMARYLLIS.—After reading Virgil's account of Amaryllis, it is not surprising some should find her a coquettish damsel. Still H. M. Worcester, Norfolk, Virginia, desires to make her acquaintance, and if the gentleman who sent us a specimen of her double-faced doings lately, will send his address to him he would take it as a favor.

NORTH AMERICAN BOTANY.—Bibliographical Index by Sereno Watson. Part the first—Polypetalæ.—Very few persons who love flowers have any adequate idea of how much they owe to the working botanist, whose labors systematize knowledge, so that any one can readily find out all that is known of what has gone before. Horticulturists have continually to look to the Botanists for advice and assistance. Without the Botanists our art and pursuits would be shorn of half their charms. This work of Mr. Watson's is just one of those pieces of hard labor that is extremely valuable to everybody, and yet without any chance of that glory which springs from what are known as original investigations or brilliant speculations. It is simply a work of reference. It gives the book, with page and in order of publication, so that any one can turn to the original authors for what he wants to know. For instance, about the yellow Locust, or Robinia, the first author is Linnæus Gen. Pl. 1, p. 101. Then Du Roi "Obs." Bot. 28. The next authority is our own, Walter "186," and then follow some twenty-five others, including Loudon, Curtis, Torrey, Gray, Chapman, and other familiar names. The monopetalous plants will follow as soon as Mr. Watson gets it ready. Mr. Watson, on application to his address, Cambridge, Mass., will furnish it for \$2 and postage, which as it contains 475 pages, one can imagine to be not one-half its cost. We hope, however, Mr. Watson will receive large orders for it, for he deserves all the encouragement we can give him to keep on with this very hard but very useful work. As a full catalogue of the plants of the United States, it has great value; as heretofore few knew where to look for them, scattered through scores of books and serials.

CANADIAN HORTICULTURIST.—This is a new monthly magazine, published at St. Catharines, under the auspices of the energetic Fruit Growers' Association of Ontario, and devoted mainly to fruit growing interests.

CULTURAL CATALOGUE of the Greenbrook and Paterson Nurseries, Paterson, N. J. We

had thought that superior as are American nursery catalogues, as a general thing, to those of Europe, they could not possibly be brought to a greater degree of usefulness, but here is one which goes beyond any which we have seen in this, that it gives a historical sketch of the plants where they have any history, as well as cultural details. Such efforts must add immensely to the intelligence of American flower lovers, and it comes within our province to commend all such efforts.

WILLARD CUTTING FLAGG.—Horticulture has suffered few more severe losses for many years past than in the death of this gentleman, which occurred at his house, at Moro, Illinois, on the 30th of March, in the 49th year of his age. He attended the meeting of the American Pomological Society, as its Secretary, at its last meeting, at Baltimore, and had an attack of the typhoid fever soon after his return, and it was from the effects of this attack that he died. His love for agriculture and horticulture grew out of his scholarly attainments, grafted on a thorough love of nature, and together made him a rare type of all that is most admirable in a Horticulturist. Thus his love for the art was for its own sake, and not for the mere bread and butter or the social power it would bring.

Yet he was not without honor, as such single-heartedness rarely is. He had been already an honored Senator in his own State Legislature, and had been prominently named as a representative of his State in the United States Senate; and though not perhaps known to him, there were warm friends who had resolved that he should sometime have a chance for the Presidency of the United States. It was the writer's good fortune to know him intimately as well as personally as a mere lover of Horticulture, and he can heartily say, that in his long experience with Horticulturists, he has rarely met one whose example in every walk of life was so worthy of following as that of Willard C. Flagg. His sympathies were not, however, confined to Horticulturists or Agriculturists, but were for all. All have lost a friend.

SCIENCE IN THE DEPARTMENT OF AGRICULTURE.—We note with great pleasure that General Le Duc has appointed Prof. Riley as Entomologist to the Department. With such men as Riley, Dr. Vasey in the Botanical, and Mr. Saunders in the Horticultural, the most enthusiastic "Why don't you do it?" can ask no more.

AMERICAN POMOLOGICAL SOCIETY.—Proceedings for 1877. We have no hesitation in pronouncing this, by great odds, the most useful volume ever issued. The reports and essays are wonderfully full and complete, and give a field view of American Pomology never before afforded. It must have been a heavy task for Secretary Flagg to organize and work the machinery for so admirably executed a task. And to think that this should be his last! President Wilder closes the volume with a proper Memoriam to his worthy associate.

THE
GARDENER'S MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

Vol. XX.

JUNE, 1878.

Number 234.

FLOWER GARDEN AND PLEASURE GROUND.

COMMUNICATIONS.

THE AMARYLLIS.

BY MISS A. G.

(Continued from page 133).

A florist told me he had discovered the secret of blooming them well, which was to give the bulbs plenty of sun and regular heat; and I agree as to the *regularity of the heat* being one of the causes of bloom, as at times when we could not command this, the buds, which had partially emerged from the bulb, would remain stationary, or, after several spasmodic growths, decayed. Some rare varieties, and seedlings, caused me keen regret by this failure to develop the beauty I was anticipating. Had I known then that hot water was so efficacious in their treatment, I might not have failed so ignominiously. They are sometimes, however, very accommodating. I have bought them in bud, removed them from the pot, and at a point of my journey re-potted them, again removed them to resume travel, and at the end of the route again potted them, when they resumed the process and finished blooming as if undisturbed. I state this that buyers may not be discouraged from purchasing or sending for them, if it is desirable, at their blooming time.

For a grand show of bloom and large flowers, I still prefer large pots for the Amaryllis, and an undisturbed state of the roots—except for top-dressing—for two or three years. A more gorgeous sight than a stand of these in bloom can seldom be seen, even among flowers. I have

seen crowds before a window thus adorned; and those who had carped at a partiality for "the odd bulbs," stand silenced before an unexpected sight of these in their royal beauty: for "Solomon in all his glory was not arrayed like one of these."

To raise Amaryllis from seed is not difficult. If the seed is well developed they all come up with vigor. If intended to bloom early they should not be disturbed. I did not know this in time to save my thrifty seedlings. I did not kill them, but they did not bloom, their vigor being decreased by the frequent re-potting given them, without care as to disturbing the soil about the roots. One florist I know of, put his Amaryllis seed into a pan and let them remain till they bloomed; this was in three years. They were of the orange variety, forming a greenish white star in the center.

My Amaryllis seed were sown in pots, in winter, and placed behind a stove. They came up in two weeks, but one or two seeds failing out of the whole. This seed was obtained from Dreer, and said to be Van Houtte's. Another set was raised from seed matured on one of my own bulbs (the rosy salmon, with a white stripe in each petal, shaded off with maroon red pencillings) obtained from Mr. Fairly, of Baltimore. I cut off all the seed pods but one, which ripened in about a month's time, and was full of good seed. I raised thirty seedlings and gave as many more seed away. At a florist's in Baltimore I saw several pods maturing on one stem. I doubted the result which did prove

disastrous, as every pod failed. Another one, however, having his plants in a warm, sunny corner, over a flue, had all the pods mature. They were on a bulb which came directly from South America, and with a number like it, were pulled up from among the rocks by sailors. The handsomest varieties of the *Amaryllis* I have seen, were most of them, unnamed.

The *Johnsonii*, a crimson scarlet, with a white stripe down each petal, is one of the easiest to cultivate, and few surpass it in beauty when well cultivated. Next to this, for constancy of bloom, is one (obtained of T. Fairly, of Baltimore,) said to be the *aulica*, though all the catalogues describe the *aulica* as bearing two flowers, of a crimson and green color. This *aulica* is of a rosy salmon pink, with a white stripe down each petal, which is shaded at each side with delicate pencilings of a maroon red. When in full vigor, it bears two stems a yard high, with six blossoms on each stem. It is then regal in its beauty. A very rich deep velvety crimson flower, with a white stripe down each petal, was bought of T. Fairly, and was said to be a seedling raised in Baltimore. I called it *King's Beauty*. It glowed with richness, and seemed to radiate with beauty, when I first beheld it.

Several orange colored *Amaryllis* I have seen in great beauty, bearing from two to four flowers on a stem. One very large flowered kind, was treated with very rich earth, and had chicken manure sprinkled around the edge of the pot, that was previously covered with fine coal—anthracite—which is said to promote the health of the bulb. *Meteor*, a very rich orange scarlet variety, was obtained of Geo. Such. It had two stems with four flowers on each. From him I obtained, also, the *Reticulata striatifolia*, having a short green leaf, with a white stripe in the center, and bearing pink flowers. This is a tender evergreen variety, and said to have very handsome flowers.

The *Vittata* is another handsome variety, varying a great deal as to beauty, some having an ungraceful flower and others very beautifully shaped. One rosy pink seedling, obtained of J. Feast, was the handsomest flower I ever saw of the light varieties. It is said the hybrids are endless.

The fall-blooming kinds do not show so many fine varieties. The *Tettuii*, *Aulica*, and a nameless one, with a broad disc and rich velvety scarlet petals, are all that I can praise. The *Tettuii* is of a bright scarlet, veined and shaded

with maroon. The *Aulica* is of dull scarlet shaded with green. One variety I saw, called *Aulica*, had immense bulbs and flowers, but was coarse looking and not desirable for the house.

COMPARATIVE ROSE LIST.

BY MR. H. B. ELLWANGER, ROCHESTER, N. Y.

In the May number of the *MONTHLY*, I notice the Comparative Rose List, giving the result of the English rose election of last year with my list of the best 48. The question is asked by the writer why such general favorites as Gen. Jacqueminot, Safrano, Bon Silene, etc., are left out, when they have been so generally adopted as forcing roses in this country? The reason is this: the election called for roses possessing peculiar qualities, such as render them suitable for exhibition purposes, and they must, therefore, have fullness of form and symmetry of outline, besides other qualifications, to be considered exhibition varieties. Now, the sorts named are certainly very valuable for forcing, but are not at all suitable for exhibition. Gen. Jacqueminot is rarely full enough to be used; the others never. General Jacqueminot will, however, always be a popular sort, for in addition to its forcing qualities it is of excellent habit, and yields a large crop of flowers, which picked in the bud or when half expanded are very useful for cut-flowers. Safrano and Bon Silene are well known as two of the best Teas for forcing. The following are also excellent: Aline Sisley, Catherine Mermet, Duchess of Edinburgh, Isabella Sprunt, Mme. Francois Janin, Mme. de St. Joseph, Mme. Jules Margottin, Mlle. Lazarine Poizeau (new), something like Mme. F. Janin, Marie Van Houtte, Monsieur Furtado and Rubens.

Among hybrid perpetuals some of the best are Abel Grand, Anne de Drisbach, Countess of Oxford, John Hopper, LaFrance, Mme. Lachanne, a splendid sort for this purpose; Mlle. Eugenie Verdier and President Thiers. All of these are among the lighter shades. They will give a much larger crop of flowers, as a rule, than the crimson varieties, though the latter are more generally used.

Among the best crimson hybrids for forcing, are Alfred Colomb, Beauty of Waltham, Charles Lefebvre, Duke of Edinburgh, Marie Bauman and Maurice Bernardin.

Number 22 in the list of 48 should read Comte de Sembui. Other slight errors are more apparent, and do not require correction.

RIBBON BEDDING.

BY C. J. BJORKLUND, HAMPTON, VA.

FIG. XVIII.—1, *Trifolium repens* pentaphyllum; 3, *Alternanthera spectabile*; 3, *A. amœna*; 4, *Mesembryanthemum cordifolium* variegatum; 5, *Alternanthera paronychioides*; and 6, *Echeveri secunda* glauca. This bed may be seven or eight feet across.

Other Fancy Beds.—Fig. XIX, is, as it will be seen, seventeen circles of various sizes, constructed on a parallelogram thirty feet long, by six wide. The center of circle *a*; 1, *Thuja* *japsis* *dolabrata* variegata; four specimens *Araucaria*

the circles; 1, to be filled with *Koniga folia* variegata, to grow free and bloom; 2, *Caprosma* *Baueriana*; and 3, *Nertera depressa*.

FIG. XX.—A Roccocco bed, thirty-four feet in diameter, should, if convenient, be placed where a view of it could be had from above, such as a balcony or piazza, when the designs will show to greatest advantage. The surface should be a gentle slope from the center to the surrounding walk, (including the grass border), and may be decorated as follows: 1, a specimen of *Amaranthus salicifolius*, and around it six or eight plants of *Abutilon maculatum* *niveum* *aureum*,

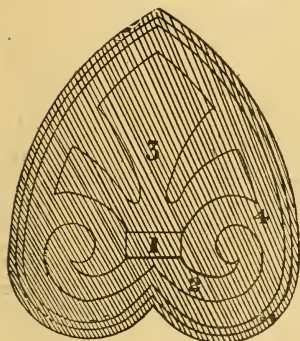


Fig. 18.

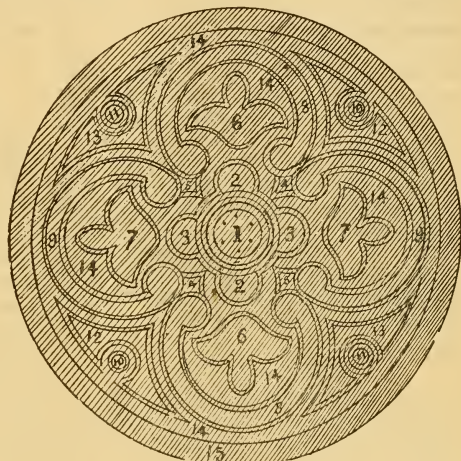


Fig. 20.

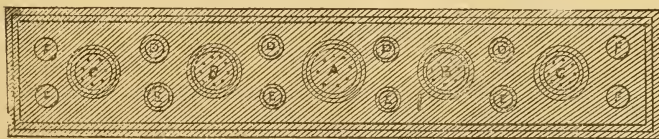


Fig. 19.

excelsa; and four specimens *Agave rotundifolia* glauca, bordered by *Cineraria maritima*, and *Pentstemon Colvillii*; *b*, *Tradescantia discolor* vittata, bordered by *Maranta zebrina*, and *Centaurea candidissima*; *c*, *Tillandsia zebrina*, bordered by *Geranium Bijou*, and *Lamium aureum* purpureum; *d*, *Fuchsia* *Tom Thumb*, bordered by *Alternanthera versicolor*; *e*, *Fuchsia* *Sunray*, bordered by *Alternanthera versicolor*; *f*, *Coleus Verschaffeltii*, the whole space between

bordered by *Coleus Verschaffeltii*; *Chamaepeuce* *Cassaboni*; *Geranium* *Happy Thought*; and the border inclosing the four spaces 2 and 3; *Thymus aureus*; 2, *Alternanthera versicolor*; 3, *A. amabile* *magnifica*; 4, *Centaurea candidissima*; 5, *Pyrethrum* *Parthenium aureum*; 6, *Geranium* *Prince of Wales* (or any golden tricolor); between them as undergrowth, *Verbena* *celestial blue*; and bordered by *Alternanthera amœna*; 7, *Geranium* *Mysterious Night* (or any silver tri-

color between); *Viola cornuta* Blue King, bordered by *Alternanthera spatulata*; 8 and 9, *Lobelia Erinus* Crystal Palace compacta, bordered by *Hyssopus officinalis*; 10, specimens of *Chamaepeuce diacantha*, bordered by *Pyrethrum*, and the rings that open on the outer side to be laid with broken bricks; 11, specimens of *Mesembryanthemum crystallinum*, bordered by *Alternanthera paronychioides*, and the open rings to be laid with coal-dust; 12, *Cerastium tomentosum*, bordered by *Alternanthera amena*; 13, *Oxalis tropaeoloides*, bordered by *Pyrethrum*; 14, to be laid with silver-sand; 15, is a two feet wide grass border, and so forth in many different sets on the same principles.

At the planting of those intended to form figures or ribbon in the carpet, the plants should be put together as close as can be afforded, to fill as soon as possible, and should, in fact, do so at once.

Having got our carpet beds planted, let us be attentive to the trimming of the plants. All that are to be level should be so as a table, but it requires care at every pinch; that all stumps be hidden by the foliage, and every figure kept in its intended shape, not allowing the foliage of two adjoining kinds to intermix with each other, nor allowing any openings whatever.

THE AILANTHUS.

BY MISS E. C. B.

And now about the *Ailanthus*. I fully believe that it is an "antidote" for the Rose bug, and other insect pests as well. At least our place, which is plentifully shaded with them, is very free from many sorts which torment our neighbors, and the canker worm has never visited us, except upon a few trees in the remote corner of the orchard, the furthest removed possible from any *Ailanthus*. But our trees are all of the sort called male *Ailanthus*, yet some of them have now obtained an age at which they bloom every year, scattering their seeds far and wide, every one of which germinates. The young *Ailanthuses* are in fact the most abundant weed on our place. How can that be accounted for? They are all of one sort, being thyrses of blossoms resembling those of the grape, feathery whitish, looking like delicate, white plumes, and smelling like—whe! They fall off, bringing the stamens upon the corolla. They are apparently all alike. Are they male trees? Then why do the seeds germinate? Is not the female *Ailanthus* an entirely different

tree, and is not this sort monæcious rather than dioecious?

[There is a popular misapprehension regarding the sexual character of the *Ailanthus*. There are trees which are purely stamiferous, sterile. These are odorless. There may be trees which are purely pistillate, but we have seen trees separated by perhaps half a mile from any other tree bear fruit freely, and we suspect they are often hermaphrodite. Cases have been known where trees for years producing one kind of flowers only, have made branches yielding the other. At any rate, it is the staminate trees, as we generally see them, the odor of which is not that of roses.—ED. G. M.]

CALIFORNIA DICENTRA.

BY W. C. L. DREW, EL DORADO, CAL.

In my botanical researches in California, I have found few flowers which were discovered with as much pleasure as our various *Dicentra*.

I well recollect the first time I found the variety known as *D. formosa*. At that time I did not know we were so highly favored as to have any members of the family within our borders. It was in a little grassy vale. When I saw it, so much did it resemble *D. spectabilis*, that I thought it was a stray plant of that well known Chinese variety, the Bleeding Heart of our gardens. On a slight examination, however, I soon saw my error, but so highly pleased was I with it, that I dug it and removed it to my garden.

The *Dicentra* belongs to the Natural Order Fumariaceæ. In California we have three varieties that I am acquainted with.

Dicentra formosa in the Sierra Nevada, at an altitude of 6,000 to 8,000 feet, is found in grassy vales near streams of water. It grows from one to two feet high. The flowers are borne on a compound racemose scape, from which they hang pendent. The flowers are of a rosy purple color; the center is a bright cream color, thus forming one of the grandest combinations among flowers.

Dicentra uniflora is found in the northern part of the State, high up on mountain sides. It is a dwarf-growing variety, never exceeding six inches in height. The flowers are borne on a simple racemose scape. They are a delicate flesh color throughout.

Dicentra chrysantha is the most robust and vigorous of our native varieties; often growing four to five feet high. The leaves are immense,

often fifteen inches long. The flowers are borne on long racemes, from which often branch out shorter scapes. The flowers are large, one-half to one inch in length being the average size. They are of the most brilliant yellow color, and when the sun shines, they sparkle and glisten as though freshly varnished. This variety, while it lacks much of the graceful habit of the other varieties, surpasses them in brilliancy and show. In their natural haunts they grow in a moderately light soil, in the vicinity of running streams. In cultivating them it will be best to plant in similar places, if possible. The finest flowers I have always found on plants growing in the shade of trees.

ANDROMEDAS.

BY MR. VLADIMIR DE NIEDMAN, PHILA.

Within the great tract of United States, there is not to be met with a single species of *Erica*; but in place of the "Blooming Heather," nature has liberally supplied this country with various species of *Andromeda* *vaccinium* (Whortleberries and Cranberries); not to mention other genera which are nearly allied to *Erica*. [The Heather of Europe, *Calluna vulgaris*, is also indigenous, though rare in the United States.—Ed.] The greater part of *Andromeda* are natives of North America, a few are found within the tropics, and only one in North Germany, the *Andromeda polifolia*, with reddish-white flowers; this plant is strictly poisonous. In the north the *Andromeda* appears shrubby-like; in the tropical parts, more arboreal. The *Andromedas* are in general, far less diffused in our parks and gardens than they should be, and yet the culture is very light; and as rightly remarked by the GARDENER'S MONTHLY, a well worthy one for their graceful habit of flowering and the pretty foliage. The fruit is a dry capsule. Whether the *Andromeda arborea* (*Oxydendron arb.*, *Lyonia arb.*) is a native of Pennsylvania it is not easy to determine; but it is safe to say, on an average, it belongs to the Northern States. This tree is from thirty to sixty feet in height; the flowers are pure white, resembling much the Lily of the Valley (*Convallaria majalis*), the foliage turning red in fall; tastes sour like the common sorrel; flowering time, July. As natives of Pennsylvania, I would refer to *Andromeda spicata* (*Zenobia racemosa*, *Andr. paniculata*, *Lyonia ligustrina*) a shrub growing in the wet low lands; willow-leaved;

flower white; July—August. Quite common in the south of Pennsylvania and Maryland, is the *Andromeda Mariana* (*Cassiope marginata*), a shrub; the flowers yellowish white with red spots; are very narcotic; poisonous; honey gathered from them by the bees is also poisonous, like that from *Kalmia angustifolia*. To the natives of the Northern States belong also the *Andromeda rosmarinifolia*, an evergreen shrub; flowers in June; reddish.

Andromeda tetragona (*Cassiope tetr.*) evergreen, creeping; blossom white, in April, May.

Andromeda bracteata. Often known under the name of *Gaultheria Shallon*, a pretty little shrub from the Northwest shores; flowers in May, June; reddish white; fruit black; ripe in August, September; tastes like our common black Whortleberry.

Andromeda cærulea (*Menziesia coerul.*, *Erica arctica*, *Phyllodoce taxifolia*); a very pretty alpine shrub, growing solitary on the northern mountains; blossoms in June, July; the flowers four and five inches in length; bluish; ground color light red; culture very difficult.

Andromeda hypnoides (*Cassiope hypnoides*); evergreen creeping shrub from Canada; strongly resembling and also growing among mosses; flower, in April, June; either white or of a flesh color.

Andromeda calyculata (*Cassandra calyculata* *Chamedaphne calyc.*, *Lyonia calyc.*); evergreen Canadian shrub; flower white in March, May. And of *Andromedas*, growing in Southern States are worth being mentioned,

Androm. floribunda (*Leucothoe florib.*, *Portuna florib.*); shrubs on mountains in Carolina and Georgia; flower white, in June.

Androm. axillaris, (*Pieris lanceolata*, *Leucothoe spinulosa*) shrub from Carolina and Georgia; blossoms beautiful; greenish white; from May to July.

Androm. speciosa; (*Zenobia dealbata*), a shrub from Virginia, Carolina, and Florida; flower white, large and bell-shaped; from June to September; the finest species of all.

Androm. acuminata (*Andr. laurina*) a shrub; from Georgia and Florida; flower white; in July, September.

Androm. cassinæfolia; much resembling the *Andromeda speciosa*.

Androm. racemosa; (*Eulotris frondosa*); from Virginia; flower white; in June, July.

Androm. ferruginea (*Lyonia rigida*); from Carolina; more like a tree; flower white; in June.

Androm. tomentosa (*Xerolotris toment. Arbutus nuda*); an evergreen shrub from New California; flower large white and wooly; in August. Besides these American varieties of *Andromeda* there are also a few strangers:

Androm. lycopodioides; a creeping shrub from Kamtschatka (Siberian Asia); flower, reddish white; corolla red.

Androm. chinensis; flower light-red; in Aug.

Androm. jamaicensis; high on the mountains of Jamaica; blossom faint red.

Androm. buxifolia; native of Isle de Bourbon; also on mountains; flowers deep red; from April to June.

Closely allied and related to the *Andromedas* is the genus *Arctostaphylos*; also an Ericaceae, valuable for the fruit (berry).

Arctos. tomentosa; northwest on the Columbia river; the fruit is eatable and chiefly serves as nutriment to the grizzly bear.

Arctos. glauca; evergreen shrub on mountains and hills of California; flower white, tinged with flesh color; the berries black and flat pressed.

Arctos. alpina (*Arbutus alp. Mairania alpina*); evergreen shrub; high on the Alps, in Switzerland (Europe), and at the Arctic regions; flower reddish in May; berries pretty red; fit for eating.

Arctos Uva-ursi (*Arctos. officinalis, Arbutus buxifolia, Arbutus procumbens*); a small shrub from the north of Europe and America; flower reddish white; from May to June; the entire plant resembles much the common red bilberry, only the berries are larger. *Arctostaphylos Uva-ursi* is greatly extolled as a remedy for Lithiasis.

[We give the above excellent abstract of the general European literature of these plants without alteration—because it will be very useful as it stands—only remarking in one instance on the Heath, as that is an important fact. American botanical literature, however, would very much extend the information. It would not by a long way limit *Cassandra calyculata* to Canada, nor the Bearberry to the "North" as strictly understood, as it is a common plant in New Jersey, and some parts of Pennsylvania. — Ed.]

NOTES ON THE CULTURE OF NATIVE PLANTS.

BY MRS. LUCY A. MILLINGTON, SOUTH HAVEN, MICH.

Seeing some communications on the culture

of our native plants reminds me that I used to do something of that myself. I have found one of the prettiest very easy. *O. spectabilis*, blossomed in March with no special care. Set in the garden it blossomed several years in succession. *C. pubescens*, *O. parviflorum* and *C. spectabile* all blossomed in a sandy loam, and the two first increased largely. I have no doubt that *O. acule* could be made to bloom in a bed of decayed pine wood, as that is almost always its location. I have seen a long row of them perched like birds on a soft, moss-grown log, that let one's feet sink in like snow. I have grown *Gentiana Andrewsii* much handsomer than they were at first, finer in color, and with more flowers. *Uvularia grandiflora* and *upervoliata* grow much handsomer in a few years with care. Our common *Aquilegia Canadensis* becomes a perpetual bloomer if not permitted to ripen seeds. Have seen a mass of roots nearly a foot through that had to be divided with an axe, having become woody and solid.

A CALIFORNIAN GARDEN.

BY CHAS. H. SHINN, NILES, CAL.

In this locality, at present date (April 17th), the standard Oranges and Lemons are a little past their fullest bloom, much fruit having plainly set. Some dwarf Oranges, imported from Japan, are hardly so far advanced, but the white buds begin to gleam through the leaves, and will soon be wide open.

We have been interested in observing the order in which our roses began to bloom this year. The *Gloire De Rosamond* came first; next, the *Madam St. Joseph*; then the *Jules Margottin*, *Luxembourg*, *Jas. Sprunt*, *Bon Silene*, and others; lagging in the rear came the *Banksias*, the double white *Cherokee*, and the old-fashioned, but never superseded, *La Marque*. The last of all, it is apprehended, will be that charming, but troublesome rose, the *Yellow Harrison*.

Our garden of April is not a beginning, but only a half-way station. The *Acacias*, *Lilacs*, and *Tamarix gallica*, the *Oxalis*, *Crocuses*, *Jonquils*, *Hyacinths*, and *Daffodils*—all these have come, and smiled on the green and dripping earth, and so have departed. Then Nature seemed to take a breath, and the *Pansies* lifted their wonderful faces from the stillness of their dark leaves, plant after plant, until dozens were in bloom; the *Anemones* and the *Ranunculuses*, grew to be flashes of color; the *Nemophila* corner

became full of tiny blue flowers, and white and dark circled ones, and spotted; Canterbury bells, stocks, Wall-flowers, Petunias, Schizanthus, and a host of similar flowers—all these welcomed April.

Lobelia cardinalis is a garden perennial of much value here, producing its brilliant flowers through the entire Summer, if seed are not allowed to ripen. The leaves also have a rich metallic luster when grown in favorable soil. *Delphinium formosum* retains its value for cut flowers, and is now in bloom. *Aquilegia chrysantha* is getting its display ready; and *Astilbe japonica* is in its prime.

Among the bulbs, *Brodæa coccinea*, *B. grandiflora*, *Camassia esculenta*, *Cyclobothra alba*, *C. aurea*, and others, are in bloom, whilst *Lilium Humboldtii* is nearly so. The remaining Californian lilies, and those from Japan, have evidently chosen May as their month of appearance. The earlier Irises were friends of March, but some still linger beneath the whitening snowballs.

The *Diosma alba*, a dwarf, fine leaved, Heath-like shrub, blooms with us all Winter, and the fragrance of both flower and leaf is charming. Among the newer plants is *Jochroma tubulosa*, which forms a fine single clump on a lawn or in a sub-tropical bed. Its oval, hairy, dark, and heavily veined leaves, its firm outlines and massive growth, and its large clusters of blue, tubular flowers—these unite to make it valuable on this coast. Some experiments have been made with the *Cycas revoluta*, which make it probable that, in sheltered places, it will stand the Winter of Central California. If so, another tropical effect may be added to our landscapes.

EDITORIAL NOTES.

ACER RUFINEROE.—A beautiful colored plate of a variety of this maple is given in the March No. of *L'Horticulture Belgique*, taken from a plant growing on the celebrated grounds of M. Lavallee, at Sevrès, in France. It is a native of Japan, and allied to our striped barked maple. It would be hardy in our country, if not already in some collection not known to us.

GARDENING IN NORFOLK.—The *Public Ledger* of Norfolk, Virginia, remarks on the growing taste of the ladies and gentlemen of that city for gardening, and attributes much of it to the successful venture of Mr. D. Barker, with his "Brambleton" green houses.

THE DWARF PYRACANTHA.—This, or as it is strangely enough called, the "White Berried Pyracantha" has proved entirely hardy at Burlington, Iowa. We suppose the ordinary scarlet berried *Pyracantha* would not be hardy that far north.

QUERCUS HETEROPHYLLA.—They seem to know more about the Bartram oak under culture in Europe than we do, for a correspondent of the *Garden*, writing from Newry, in Ireland, says:—

"This oak is very nearly hardy, and it retains its leaves here until January or February; in fact, it never loses them until we have a sharp nip of frost. Its flexible shoots, graceful habit, and diversified foliage make it a desirable addition to collections of hardy trees. It is sometimes called in catalogues *Q. agnostifolia*." It is however just possible that this refers to *Quercus Robur heterophylla*, quite another thing and which is already in the "Fairmount collection."

GREEN HOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

CATTLEYAS.

BY CHAS. H. S., BALTIMORE, MD.

While there may be a question as to the successful culture of some Orchids—coming from elevated regions where they are at all times surrounded by a cool, moist atmosphere,—with regard to the splendid genus *Cattleya*, there can be none; and it is my opinion that they will be

grown and bloomed in this country much finer than either in England or on the Continent. In beauty they are surpassed by no member of the Orchid family. They are easy to cultivate, free to bloom, blooms lasting from 20 to 50 days, nearly all shades of color, except blue, and blooming in some one or other of the species at all seasons. A house properly constructed and filled with nothing but *Cattleyas* and their congeners, the large *Lælias* from Brazil, would be in bloom all the year round. And I find all

Cattleyas, whether they come from Brazil, New Granada, Venezuela, or Central America, can be grown in the same house, and under the same treatment, only having a correct knowledge of their proper season of growth. My experience is that all Cattleya grow best in pots, except a few small growers. But in growing them in pots, the pots should be filled three-quarters full of drainage, and the plants kept well above the pots, and the lower bulbs covered with sphagnum moss. As the roots of Cattleyas are perennial, great care should be taken to keep the snails and wood-lice from eating them; and at the time the plants are making new roots they should be kept well mossed up. The old roots, if kept sound, will emit new laterals, which will add much to the vigor of the plants.

Cattleyas and Lælias suffer more from injudicious watering than any Orchids that I have cultivated, and will do with less water. I grow small ferns in the moss with the Cattleyas, and as long as the ferns show no want of water, I know that the Cattleyas have enough. There is less danger of over-watering, when the plants are kept well above the pots. In a few years, the moss will be a mass of fine, healthy roots. Cattleyas need a long season of rest, differing according to their time of blooming. I will note later, in describing the species, what I have found to be the dormant season.

There seems to be three distinct forms of growth among Cattleyas: 1st, like *C. labiata*, which has a bulb about 5 or 6 inches long, and one strong leathery leaf varying in length from 6 inches to a foot; 2d, like *Skinnerii*, which has clavate or club-shaped bulbs with two leaves from 3 to 6 inches long; 3d, like *C. Harrisonii*, with slender bulbs from 1 to 2½ feet long, surmounted by two or three leaves. These latter are all Brazilian species. Cattleyas all bloom from a spathe coming out of the top of the bulbs, and vary in the number of the blooms from two to a dozen.

Of the first group with one leaf, *C. labiata*, from Brazil, is probably the handsomest. Flowers six inches in diameter; sepals and petals rose; lip rich crimson; blooms from June to October; has three or four flowers on a stem, and lasts in bloom four weeks. There are quite a number of varieties of this grand Orchid. I have one with nearly white sepals and petals. This species commences to grow late in the Fall, and so will all Cattleyas that come from Brazil, if kept in a temperature of 60° to 65°. They will bloom in

May, June or July, and rest until the middle of November.

C. crispa, also called *Lælia crispa*. From Brazil. Sepals and petals, slightly white tinged purple and curled on the edges; lip crimson violet, edges white, and the edge is beautifully crisped, bloom in the summer. Flowers four inches diameter, and last about 3 weeks.

C. Mossæ, Venezuela, growth like *C. labiata*; sepals and petals from nearly white to rose; lip rosy purple, with a bright orange disk. In the markings there is no Orchid that varies more than this, and also in the size of the flowers. But all are beautiful, and it should be grown largely. Flowers from 5 to 8 inches in diameter, and from two to five on a stem; can be brought into bloom in May.

C. Trianae, *C. Bogotensis* and *C. Warscewiczii*. These seem to me to be very closely allied and all bloom in the winter, and appear to me to be no more separate species than the different varieties of *C. Mossæ*; sepals and petals white or rosy white, lip rosy lilac, with an orange blotch at the throat. Blooms two or three on a stem, and are nearly 6 inches in diameter. If kept in a dry, cool room, the blooms will last four weeks.

C. chocoensis. Bulbs about 9 inches long and more slender than *C. labiata*. Blooms in winter; sepals and petals white, lip purple and orange with a crisped margin. The flowers are thick, and have a waxy appearance, very fragrant.

C. quadricolor and *C. maxima* are like *C. chocoensis* in growth and form of flower, but I have not bloomed either of them. They come from the Pacific side of New Granada.

C. Dowiana, Costa Rica. This by many is considered finer than *C. labiata*. It is a strong grower, sepals and petals nankeen yellow; lip purplish crimson, with golden yellow veins. Flowers from 5 to 6 inches in diameter, and from three to six on a stem. I saw this in bloom with the late Mr. A. Hack. It is getting scarce in Costa Rica, 2d class.

C. Skinnerii, Guatemala. Has upright club-shaped bulbs 8 to 10 inches in height and two leaves; flowers from three to ten on a stem. Rose with crimson lip. Flowers about 4 inches in diameter, and blooms in May.

C. superba, British Guiana. Bulbs and leaves much like *C. Skinnerii*, but much darker. Flowers five inches in diameter, about four on a stem, and blooms through the Summer and Fall. Sepals and petals splendid rose-lip crimson with white

margin. This requires more heat than any other Cattleya, and seems to do best on a block with moss.

C. Acklandii, Brazil. Not a very strong grower, but has the bulbs club-shaped and two dark green leaves. Sepals and petals light olive green barred purple, lip purple with a yellow blotch, grows well on a piece of rough cork.

C. Schilleriana, Brazil. Nearly related to the last, but stronger in growth. Both will sometimes bloom twice in the season. If grown on a block, they must not be allowed to get too dry and shriveled, as they seem to suffer from it more than other Cattleyas.

C. marginata, *C. bulbosa*, *C. pumila*, are three beautiful small growing Cattleyas from Brazil, and grow best on rough cork. They have rose flowers with crimson lip; 3d class.

C. Harrisonii has long slender bulbs about 16 inches long, and two or three leaves. Flowers in Summer. Flowers rose; lip light rose with yellow center. Has about four blooms on a stem. I had a plant with over fifty blooms open at the same time, each 4 inches in diameter. I may here remark that all the Brazilian Cattleyas with terete bulbs, have narrower sepals and petals and shorter lip than the varieties like *C. Mossii*.

C. Loddigesii. In growth like *C. Harrisonii*, but not quite as strong a grower. Flowers pale rose with some light purplish blotches, lip light rose and whitish yellow. Blooms in Summer.

C. Forbesii. In growth like *C. Harrisonii*, sepals and petals greenish yellow, and in some varieties bronze yellow; lip very handsome, white outside, orange yellow inside, streaked crimson. This is probably the least showy of the Cattleyas; but a large plant in bloom is very showy, and it is much better than many other Orchids. *C. intermedia*, *C. intermedia violacea* and *C. i. amethystina*, are varieties of the same species. In growth rather shorter and stouter than *C. Harrisonii*; sepals and petals white, blush or rosy white; lip white, with a purple blotch on the end. I have now four plants in bloom, no two exactly alike. It is a very neat and easily bloomed Cattleya, and if kept in a dry room, the blooms remain from four to six weeks. All Orchids in bloom should be put where no water can fall on the blooms, as they spot very easily.

C. Guttata. Brazil; bulbs two feet long; flowers four to ten, about 4 inches in diameter; sepals and petals greenish yellow, with crimson spots; lip white with purple blotch; blooms in Summer and last three weeks.

C. Guttata Leopoldii. Growth like *C. Guttata*; sepals and petals dark green, mottled brown and yellow; lip crimson purple; bears from six to twelve flowers on a spike; blooms in Summer.

C. amethystoglossa. Fall; slender bulbs two to three feet high; sepals and petals light rose, spotted purple; lip purple; blooms in March and April. I have had several plants sent from Brazil for the species, but have never got the true one.

C. citrina. Mexico; dwarf plant with small bulbs covered with a white skin; has two glaucous leaves about six inches long; bears one or two flowers of a rich yellow in all parts except the edge of the lips, which is white. The flowers are large for the size of the plant, are very beautiful, and have the odor of lemons; it is found growing with the leaves down. This plant has no resemblance to any other Cattleya, and I have doubts of its being a true Cattleya; if it is, it would be a fine one to cross with some of the others.

There are a great many other Cattleyas, some distinct species, but many others are only varieties or natural hybrids. Among the new ones highly recommended are *C. gigas*, *C. Eldorado*, *C. Exoniensis* (hybrid); *C. Mendali*, *C. speciosissima*, *C. velutina* and *C. Warneri*. Any one growing Orchids cannot have too many Cattleyas. I have never seen one that was not handsome.

AMONG THE ORCHID GROWERS.

BY MR. W. FALCONER, BOTANICAL GARDEN, CAMBRIDGE, MASS.

The Orchid-Grower's Manual.—Talking about Orchids, I may say that General Rathbone mentioned to me, that when he began Orchid-growing several years ago, he knew nothing at all about it, but he got a copy of the *Orchid-Grower's Manual*, by B. S. Williams, of London, studied it carefully, and adapted his practice to the directions of the Manual, modifying, of course, as he best knew how, to suit our American climate; and what is the result? One of the very healthiest and best-grown collections of Orchids in the United States.

There are other Orchid collections at and near Albany, but not being pre-advised of their being there, unfortunately I had no time to visit them. At other places on the Hudson, I found a few Orchids, but nothing to speak of.

For Orchids, South Amboy is to New Jersey what Albany is to New York. At Such's nursery, the Orchid collection is very extensive, and for a commercial establishment, the speci-

mens of *Cattleyas*, *Dendrobiums*, *Cypripediums*, *Angreecums*, *Vandas*, &c., are exceptionally large. Health and vigor are everywhere apparent. The tiny but charming *Sophronites* were at their best. Most all of them were attached to earthenware blocks, on which they seemed quite at home. *S. grandiflora* has the largest and brightest scarlet flowers; cernua, red to orange red; and violacea, mauve to purplish violet. *Oncidium ornithorhyncum*, growing on similar blocks and in a cool house, had many massive spikes of deliciously fragrant blossoms; and mats of *Odontoglossum Rossii majus*, with five blooms on a spike, also depended in the *Camellia* house. Massive specimens of the ever-blooming *Cypripedium Rozelei* had many flower stems, and specimens of *C. caricinum* in 18-inch pans were growing like sedge-grass in a swamp. A plant of *Augreecum eburneum* showed nine flower-spikes, and near it was a pan containing a *Peristeria elata* that showed the ends of three flower-stems which Mr. Taplin says were six feet high when in perfection. He mentioned that he gave these plants plenty roof-room and a rich spongy soil. The display of *Calanthes* was fine.

Here, that most beautiful Cape of Good Hope Orchid, *Disa grandiflora*, is better grown than I know of anywhere else, either in this country or any other. I saw them in perfection in 1876, but when I was there this season it was too late,—the *Disas* had done blooming. In England, five blooms on a spike is good, and seven is excellent; but Mr. Taplin grows pans of it with from seven to nine blooms on a stem, and several, I forget how many, stems to a pan. It is no mean variety either, for the blooms are of a bright scarlet to crimson color, and 4 inches across.

At Mr. Rathbun's—just beside South Amboy depot—is a very fine collection of Orchids in excellent health and rigid cleanliness. I noticed about a score of plants of *Oncidium Papilio* in bloom, also a very excellent variety of that most beautiful of butterfly Orchids—*O. Kramerianum*. *O. Rogersii* had 149 flowers, and *Lælia anceps* and *autumnalis* were nicely in blossom. A few varieties of *Lycaste Skinnerii* were opening their blossoms, and there was a goodly show of *Cypripediums*, notably *insigne*, and a nice little plant of *niveum*. Mr. R. has some fine plants of *Dendrobium Falconerii*—one of the loveliest exotics in existence; and Mr. Clements, the gardener, is now resting it in a cool house; he expects it ought to bloom pretty well this year. Mr. C. tells me that *Odontoglossum citrosimum*

is one of the finest and easiest grown species of the genus growing very freely, and to a certainty producing annually in early Summer, its long arching spikes of lovely white flowers; and substantially corroborates his statement.

I never saw so many large plants together of *Cypripedium insigne* as I did at Bennett's nurseries, at Flatbush, L. I.; there were several scores of them, and all in bloom. Mr. B. also grows *Dendrobium nobile* in great quantity, for furnishing cut flowers for market. At Mrs. Gardner Brewer's, at Newport, R. I., is a famous collection of Orchids. The plants, particularly the *Cattleyas*, are small, but their clean fresh leaves and pseudo-bulbs and solid fleshy roots permeating to almost matting the lumpy peat the pots contain, foretell what we may expect as the result of Mr. Hill's practical care. Mr. H. was one of the most noted Orchid growers in England, and apparently his labors are to be as successful here as they were—to my own knowledge—at Manchester, Wandsworth, and Blandford, in England. Here *Oncidium Rogersii* has three spikes—two small and one medium-sized, and some 150 blooms and *O. verrucosum* is likewise prettily flowered. The beautiful *Cattleya Eldorado splendens* is also in bloom, and there is quite a display of *Calanthes* and *Cypripediums*.

FOLIAGE PLANTS FOR WINDOW CULTURE.

BY MRS. R. B. E., MELROSE, MASS.

Premising that among the readers of the MONTHLY there are some who like to turn aside from the beaten track, wherein grow *Callas*, *Geraniums*, *Abutilons*, &c., to "rarer fields and pastures new," I give herewith a brief sketch of my success with some of the less commonly grown window plants. And for ease of culture and showiness of foliage, I consider the *Croton* at the head of the list. I have a *Croton interruptum*, which I bought of Mr. Saul one year ago last May, then a very small plant, and to-day it is thirty inches high by as many broad, finely branched and richly colored. I do not, however, think *interruptum* nearly as handsome as some of the others; indeed, *pictum*, though an old variety, is more showy. I have one of the last, which is very lovely, with its gold and crimson markings. Of the newer varieties, *Youngii*, *Veitchii* and *undulatum* are splendid species. In my opinion the latter is the prettiest, though all are magnificent. *Crotons* require strong sun-

light, and the warmest place at command. I shower mine daily with warm water, and keep them on the highest shelf; and they well repay this slight care with their brilliantly-colored leaves, more ornamental, I think, than flowers. *Dracenas* are also both ornamental and easy of culture, and give a nice look to a stand of plants. But for a north window, and a cooler location, I think *Aspidistra variegata* the finest thing I have ever tried. I have one that has over thirty of its long, broad, glossy leaves, from four to six inches across, each elegantly striped with white, and gracefully recurved. It is never troubled with insects of any sort, and ought to be more often seen than it is. It requires a liberal supply of water, both over the foliage and at the root. Of rarer plants, I have grown with good success *Palms*, *Pandanus*, *Marantas*, *Tillandsia* and *Dieffenbachia maculata*, the latter an especially fine, free-growing plant, with broad green leaves, prettily spotted with white. It is recommended for wardian cases, but I have had no trouble with it in my sitting-room. Of course these more delicate plants require thought and care in their treatment, but they amply repay the extra trouble by the elegant effect they give to a stand of blooming plants. I think we might grow many more of what are classed as "stove" plants in our rooms, by proper attention to cleanliness, and moisture in the air. In addition to water on the stove, I keep large sponges, constantly wet, lying among my plants. I have, in this room, a Maiden-hair Fern, which has thrown up between thirty and forty fronds, some of them two feet high, and the mass more than that across.

I will stop to mention but one blooming plant, as this article is already too long. One year ago last spring, in looking over Mr. Saul's catalogue for something new for winter blooming, I came upon the *Rogiera*. I sent and got one by way of experiment. And I wish to testify my extreme satisfaction with this pretty, fragrant plant. The variety I had, bore pinkish-white flowers, in heads like the *Bouvardia*, only the clusters were three times as large, and the fragrance is peculiar and exquisite. It needs heat and sunshine, and grows freely without further trouble.

THE MENNONITE CRASS BURNER.

BY PROF. J. D. BUTLER.

No house in Washington is such a Japanese gem as the home of General Horace Capron.

This gentleman, going to Japan in 1871, took with him his carriage and horses. He was soon requested to lend his turn-out to the emperor, and then invited to the palace, where his majesty said to him: "Sir! I have sent for you to thank you personally for introducing such animals into my country. I never knew before that they existed on the face of the earth." The General was then employed to put up a flouring mill—as bread was no less unknown than horses to the Japanese. Nor were his rolls less welcome than his roadsters. He also built a saw-mill which cut twelve thousand feet daily—which was all that six hundred sawyers could do. Among other services he showed how to can salmon, and so rendered that fishery ten times more valuable than it had been.

He had his reward. Everything rich and rare that had been garnered up in the imperial treasure-house was lavished upon him, and he came home laden with the spoils of the farthest East.

If republican were as rich as the Mikado, the Nebraskans would bestow a similar testimonial on the Mennonites who have settled among them. Those Russian exiles have introduced a variety of fuel which will prove as great a boon to prairie States, as horses or mills to Japan. They have demonstrated that every farmer may find on his own homestead, if not a coal mine, yet whatever he needs to burn on his hearth.

Though I was long ago a traveler in Russia, my attention was never called to the Russian style of heating until 1873. In that year, being on a western tour, I fell in with seven Mennonite deputies in quest of a new home for their people, who for conscience sake, were forced to leave their old one on the Black Sea. We were together in various parts of Nebraska. Along the Republican and smaller streams, we found a good growth of timber—but every acre it stood on had been snapped up, either by settlers or speculators.

Much to my astonishment I discovered that my companions liked the country. In talking with German squatters whom we had called upon, they had ascertained that the crop was twice as large as that where they came from. When I asked "what will you do for fuel?" their answer was: "Look around. We see it ready to our hands in every straw stack and on every prairie. Grass and straw are what we, and our fathers before us, have always used." We passed one even-

ing by a brick kiln in Crete, which was fired up with coal. They remarked to me that they could burn brick without either coal or wood.

Their report on their return to Europe was such as to bring a thousand of their co-religionists into Nebraska. And while a large number of these people have gone into Manitoba, Minnesota, Kansas and Dakota, it is true, I think, that the best class have made their homes in Nebraska, and in that State are to be found the most prosperous colonies. Two of their settlements there I chanced to visit last autumn—one near Beatrice, on the Big Blue, and the other farther west in York county. Mindful of my conversations four years before, my first inquiry was regarding fuel, and the mode of using it. In every house I entered, my curiosity was gratified. The first dinner I ate cooked with grass, I set down as a novelty in my experience. A few words of mine concerning the Mennonite device for cooking and heating were inserted in a letter which appeared in the *Chicago Times* last October, and in a pamphlet entitled a "September Scamper." This notice has overwhelmed me

with letters begging for further particulars, not only from various States but from abroad, and even from New Zealand. These letters I could not answer, even with a manifold letter-writer, and I have therefore, prepared the present circular, which the post office can scatter like snow-flakes.

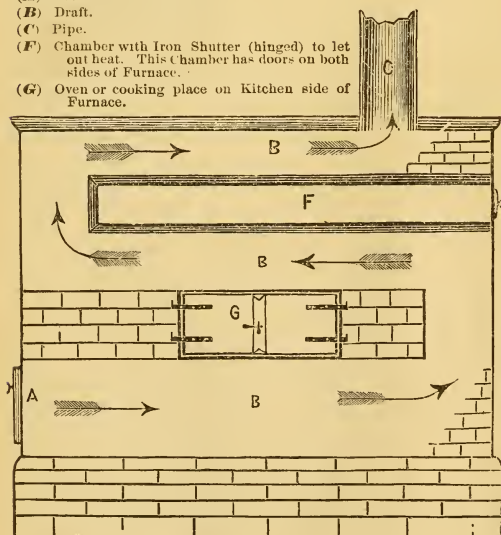
The grass furnace or stove is nothing costly, or complicated, or likely to get out of order. On the other hand it is a contrivance so simple that many will say of it as one man did when he first saw a railroad track: "Nobody but a fool could have thought of so simple a thing." In a word, as the Irishman made a cannon by taking a large hole and pouring iron around it, so the Mennonite mother of food and warmth is developed by piling brick or stones round a hollow.

Aware that such generalities are too vague, I will make my description more specific, and since the eye catches in an instant what the ear cannot learn in an hour, I have also had a diagram prepared which will render the whole mystery plain and level to the lowest capacity. (See diagrams.)

SIDE VIEW OF THE
"MENNONITE GRASS-BURNER."

EXPLANATIONS:

- (A) Furnace Door to Fire-Box.
- (B) Draft.
- (C) Pipe.
- (F) Chamber with Iron Shutter (hinged) to let out heat. This Chamber has doors on both sides of Furnace.
- (G) Oven or cooking place on Kitchen side of Furnace.



The material used for the Russian furnace seems unimportant. Some employ common brick, others stone; one builder told me he preferred to mix one part of sand with two of clay. In his judgment this mixture retained heat longer for radiation through a house. The position of the furnace is naturally as central as possible, because heat tends to diffuse itself on all sides alike.

Furnaces will, of course, vary in size with the size of houses. A good model is that shown in the diagram. Its length is five feet, its height six, and its width two and a half. The bricks employed are about six hundred, unless the walls be of extraordinary thickness. The structure may be said to have six stories. 1, the ash-box; 2, the fire-box; 3, the oven; 4, smoke passage; 5, hot air chamber; 6, smoke passage either to a chimney or to a drum in an upper room.

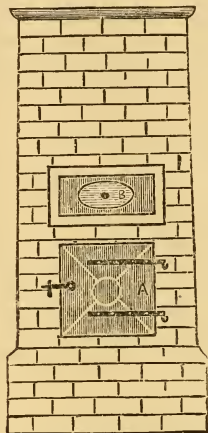
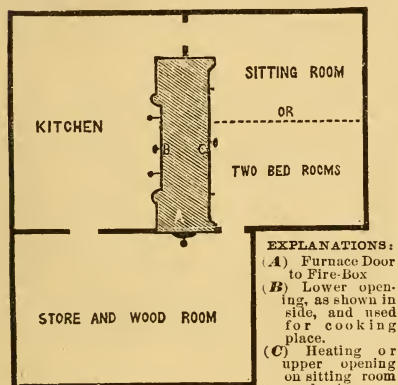
Many questions have been asked me as to the size of the fire or fuel-box. Its length is about four feet,

its width and height, each about a foot and a half. It is asked, "How is the grass pressed or prepared for the fire-box?" It is not

to secure their honey—and at his neighbor who put into his stove the corn which he might have sold, the same year, for fifty cents a bushel.

GROUND PLAN OF HOUSE,

Showing Location of Furnace.



END VIEW OF THE

"MENNONITE GRASS BURNER."

EXPLANATIONS:

- (A) Furnace Door to Fire-Box.
 (B) Cooking place or Oven. This opening sometimes omitted.

prepared at all, but is thrust in with a fork as one would throw fodder into a rack. People suppose they must be putting in this fuel all the time. This is not the fact. At the house of Bishop Peters (48x27 feet), which is a large one for a new country, the grass or straw is pitched in for about twenty minutes, twice, or at most three times in twenty-four hours. That amount of firing up suffices both for cooking and comfort.

It will be observed that the heated air strikes the oven, and also the reservoir of hot air both above and below, and that no particle of hot air reaches the chimney till after turning four corners. It works its passage. The iron plates, doors and shutters are such as any foundry can furnish. They are inexpensive. In a case where I inquired the cost, it was five dollars.

Near a score of years ago, when I first pushed west of the Missouri, my feeling was, "What a corn-and-wheat-growing capability here runs to waste! What myriads of buffaloes, too, have been shot merely for the petty dainty of their tongues!" So now in the light of Mennonite experience, many a Yankee in Nebraska sees that he has thrown away a cooking and warming power that had millions in it. He long ago laughed at his father smothering bees in order

He now laughs with the other side of his mouth at himself for burning out doors that prairie produce which, if burned in doors, would have saved him, too, many a dollar. He who thus laughs will need no preaching to make him square his practice in the matter of cookery and housewarming according to the Mennonite plan. His faith will be stronger than ever, that the Providence which created quinine where chills prevail, as well as perfumes where negroes are most numerous, and provided buffalo-chips for the Indian in the far west, has there also furnished fuel for the civilized settler—"grass of the field, which to-day is, and to-morrow is cast into the oven"—a gift which, if he makes full proof of it, will be sufficient for all his needs.

Straw and old prairie grass have been thought as useless as grave stones after the resurrection. But the recent utilizing of them is in keeping with the spirit of the age—with developing patent flour best suited to human uses from that part of wheat which had been the food of hogs, and with planing mills so contrived that they feed their boilers with their own shavings. Indeed, it surpasses all witty inventions in its line, unless it be the proposal, just now started, for turning even tramps to account, by clapping them into the regular army, and sending them among Indians to scalp, or to be scalped, no matter which.

Many Nebraska Yankees were made happy

last winter, thanks to the Mennonite stove. More will be next winter. That household blessing to an outsider seems capable of little improvement. But the Yankee will improve it, for he has improved everything else he has borrowed—everything, from watches to steam engines, ships, and even religion. In fact his betterments in the last article are said to be as manifold

"As if religion were intended
For nothing else but to be mended."

Thus Yankee cuteness may render the Russian stove simpler, smaller, cheaper, of better material, of more elegant design, of more economical combustion. But as now used by Nebraska Mennonites, it is worthy of all acceptance by every prairie pioneer. A Hibernian hearing of a stove that would save half his wood, said he would buy two and save the whole. The save-all that he was after, he would have found in a Mennonite grass burner.

EDITORIAL NOTES.

A ROOM GARDEN.—We were agreeably surprised, a few days ago, by finding the *Ladies' Floral Cabinet* on our table. Not being in sight for so many years, it had passed out of mind. The one before us has a nice illustration of the room garden of Mrs. Clara R. Sweetzer, of Peabody, Mass., which we notice particularly to comment on the wisdom of the lady in the selection of honeysuckles, ivy, and such hardy plants to grow over the pretty wire frames that flank and arch over her windows. Most persons fail with room flowers, because they choose tender things that require much light or heat, or otherwise great care. There are many things which are nearly hardy, evergreen, and in many ways interesting, that would make a room look beautiful in winter; and the lady has shown excellent judgment in the selection, as the picture of her pretty room fully proves.

LENT LILIES.—In the quotations of the London cut-flower market, are frequent references to "Lent Lilies." It appears this is the new fashionable name for the Daffodil. As Daffodil it is only worth a few farthings a dozen, and would hardly be tolerated on an exalted occasion; but as "Lent Lilies" they bring fair prices, that more than cover the first cost of roots.

TEA ROSES IN ENGLAND.—Of the marriage of Lord Roseberry, in which three thousand Tea Rose buds were used, it is remarked that "even a Rothschild might doubt the possibility of getting that number" in March. If our English friends must have rose-buds in March at their weddings, let them marry in our large Eastern cities, and any florist will get them 10,000 on a week's notice. It does look as if our florists had "patronage."

PROGRESS OF ORCHID CULTURE IN THE UNITED STATES.—From all we can learn, the taste for Orchid-growing is increasing very much among our people; and Mr. Thomas Hogg and Mr. Rand have been collecting in tropical America. Among a recent consignment from the former were no less than 700 fine plants of *Cattleya Mossae*. Besides numerous shipments have been made by nurserymen from Guatemala, all of which were sold at public sale in New York, and brought fair prices.

SCRAPS AND QUERIES.

LADY WASHINGTON PELARGONIUMS.—M. A. S., Baltimore, asks: "Why are these called Lady Washington Pelargoniums? I find no reference to any such in Paxton's Dictionary."

[When botanists came to calling all garden Geraniums Pelargoniums, the people had to make some distinction for convenience sake. The old scarlet Geraniums are now Zonale Pelargoniums, and many other "Pelargoniums"—and this Pelargonium—the old Pelargonium of the florists, had no distinctive name. It had long been known among American market-people as the "Washington Geraniums," and the florists seem to have caught it up as a convenience. It is an American issue, and not likely to be in "Paxton;" but there is no more reason why it is not legitimate to call them by this name as for a section to be called "Regal" or any other name in England.—ED. G. M.]

VARIEGATED PELARGONIUM.—S. F. T., Saratoga, N. Y., says: "I have a seedling Pelargonium (Lady Washington), that is variegated with white on the leaves. The leaves are not flat like the green kinds, but cupped and very much toothed on the edges. Has not yet flowered."

FRUIT AND VEGETABLE GARDENING.

COMMUNICATIONS.

QUALITY AND CULTURE OF PEARS.

BY GEN. W. H. NOBLE, BRIDGEPORT, CONN.

And first, no pear, new or old, should cumber our lists, not in tree, fruit or pretty nearly equal to the best of its season (say, for Summer) to those luscious favorites which crown your table, till the full ripeness of the late Autumnal varieties into which they glide.

Second. A pear should be either at home everywhere, or named as partial to some locality. Some are as whimsical as humans about the soil in which they dwell, or the winds that blow on them, or the latitude of their home. Many kinds are as sensitive to the situation as are those European grapes, which on one side of a mountain yield a wine the pride of princely tables, whose vintage on the other slope makes but the common drink of the peasant.

Third. The world has no room for small pears. new or old, that do not grade pretty closely up to the very best of their season. There is no market for small pears much below such a standard of excellence as, say for Fall pears, the Seckel. Big kinds, which do not grade quite up to that high level, may do. Fruit dealers buy no small pears when big ones, about as good to eat, are at hand. In fact, small pears must be mighty good to command a market.

Fourth. However large or good a fruit your tree may bear, to elevate special care or culture, yet it must be hardy in leaf and limb, and a good thrifty grower, not prone to blight on twig or foliage. Its bark must show none of those deep, unseemly cracks and gashes, which so mar the looks and health, and life of some of the very best pears. Unless exceptionally reliable for fruit, good and large, no tree deserves planting that is tender to over-bearing or to tearing winds.

Fifth. A pear worthy of the highest grade and large culture, unless a Winter kind, should ripen readily and slowly, either on tree or in the house, needing no extra watching. Some pears in this regard exact as much care as young turkeys, or bees in swarming time. There are others whose very wind-falls are good, and which keep on improving up to full maturity.

There are pears which if not picked just at the right time, will rot at the core; others are prone to take on general decay, or to become mealy and insipid, unless picked and house-ripened; even then, if not eaten at the very moment of maturity they are worthless, or rot. There are some that give no such trouble, which, on the tree or the house, will hold good and sound, and slowly ripen till all are gone—pears into which the roots of the rot fungus make no headway, and about which you need not worry much more than over your apple or potato crop.

Now, how many of the pears, recommended for each season, come up to these standards, in tree or fruit? Take the Summer kinds. The Madeline is the earliest; yet who ever had a good one? They pass because they cook well, and are early; but they are astringent and choke. The Bloodgood is hardly better. The Summer Doyenne is too little for market, and only sought because so early and so pretty. Osband's Summer, one of the earliest and handsome, though sometimes very good, needs early picking and good house care; but then it is small and uncertain, and does not crop well. The Giffard is as yet the only fine, full standard, very early pear that I have eaten. It often overbears; but in deep soil, and not loaded with too big a crop, it is a very fine fruit, and a good deal above medium size. It is never insipid, ripens well on the tree, though better in the house. The tree is healthy and thrifty, and with early pruning gains a graceful form. One of de Shurtliff's seedlings, the Pemberton, a full medium summer pear, would be most desirable, as it is the most beautiful of fruits, were it not for its proneness to leaf-blight. I am not going over the list of this class; but there is ample room for better large Summer pears, fulfilling all the terms of our rules. We need not slight even mediums as good and large as well grown Dearborn Seedlings.

In face of such fickleness and defects in kinds, and the crude and untaught tastes so common, it is plain that pomological judges and fruit fanciers should hold as well for pears, as do the poultry-men, a scale of points; up to those standards every fruit should score pretty closely, to gain acceptance. Its record or its offer for sale should state that score. The Fall kinds, new or

old, both in tree and fruit, would come before us under a measure of merit—better than any mere endorsement. Such a regimen would save the average planter a world of trouble. No more wasted years of patient waiting would end in re-grafting the fickle, cracking, blighting things.

I need not canvass the Fall and Winter pears put forward for our planting. They have no exemption from the frailties of their kind. Lots of them are "uncertain, coy and hard to please" into a luscious ripeness. Even after careful cuddling and watching, fine grown specimens often woefully dash our hopes. The leaves blight, and the fruit never gets over the bereavement; or if the season is too wet or too short, a whole crop of some kind is fit only for the stew pan or the pigs.

But we want even more than rules—some choicely located Pomological Garden, where all fruits may be tested over broad acres. No ordinary planter can afford the time, even if he has the facilities, to test every kind for which high qualities are claimed. I despair of such a garden, except under the Agricultural Bureau of the general Government. Fortunately, the climate of Washington is so near a medium of our two extremes that any variety there perfecting would have a fair chance to suit every latitude. That Bureau should get out of that petty seed distribution, in which so much blunder and plunder is off-set by so little good. In that business, the seedsmen, whose catalogues and seed boxes reach every country store and border post office, will beat them forever; but a Pomological Garden will furnish it a lasting and blessed work, too long and large for an individual task. If it now and then gives a Congressman a tree, its scions would reach a good deal closer to his constituents than one of Mullett's choice plans for a Senatorial mansion. There are but few lines of culture in which the clumsy, time-serving hands of the Government are not out of place. There is little work which the people can do in which government should ever dabble. But there are lives of experimental trial whose task is too broad, and whose direct results are too profitless, to tempt, or to pay for individual effort. These are just those to which a wise Government will put its powerful and tireless hand and plentiful resources—a grand Pomological Garden is one. Go in for it, Mr. Le Duc, and you can have the pomological world back you for the coveted dignity of a cabinet appointment.

THE DWARF JUNE BERRY.

BY JAMES TRUITT, CHANUTE, NEOSHO CO., KANSAS.

I see an inquiry in the March number of the *GARDENER'S MONTHLY*, asking what is the dwarf Juneberry. It is a dwarf species of the Service berry that grows wild in the woods of Kentucky, Ohio, and probably in other States. The fruit and foliage of the two are alike; the only difference I ever could discover between the two, one is a tree growing fifty feet high, the other is a little dwarf, growing three to four feet high. I have had them bearing abundantly at eighteen inches in height; have had it in bearing for the last ten years. I brought a few plants with me when I came here; and found it growing here with one of my neighbors; he says it bears profusely here. Here it is easy grown from layers, and bears fruit the second year from planting.

[The point we are not quite clear about is the distinction between the "dwarf" June Berry and any other. The common one—Indian cherry of these parts—grows 25 to 30 feet high; but for all that it bears freely, and with nice large fruit, at two or three feet, and at two or three years old. What we wish to find out for our readers is, whether they could call the ordinary June Berry the "dwarf" June Berry, without being considered "a fraud." For there is no use in having distinctive names without differences. —Ed. G. M.]

NOTES ON NEW FRUITS.

BY W. S. CARPENTER, RYE, N. Y.

A few years ago, I received from the Rocky Mountains some plum trees called the Yosemite, which is likely to prove of great value in this section. The tree is quite distinct from any other kind of plum that I have seen. It is a very strong grower, very large leaves, and as free from disease as an apple tree, and thoroughly curculio proof. There are two varieties: One strongly resembles the Damson, in size and color, and is quite equal to that variety for canning; the other is quite large, bright yellow with a scarlet cheek, very handsome. The trees bear when not more than two or three years old, and you are sure of a crop of fruit; not a plum is destroyed by the curculio. Ten years ago I planted an orchard of 25 varieties of our best plums, but never gathered a peck of fruit from the trees, which are now nearly destroyed with the black rot. I have the Wild Goose plum, but get but little fruit. There are a number of kinds which

have been sent out under the name of Wild Goose, all differing in size, color, and quality, which are only varieties of the Chickasaw. The following are improved varieties of the Chickasaw and will to some extent resist the attack of the curculio: Norman, Mountain Plum, Indian Chief, Miner, and Richland.

Within a few years a large number of new Strawberries have been added to our list of improved varieties. Monarch of the West, Centennial, Capt. Jack, Cumberland Triumph, Dumen, President Lincoln, Durand's Beauty, Great American, Star of the West, Franklin, Sterling, Duchess, Prouty's Seedling and Crescent Seedling, may be named as promising, if we except Star of the West, which with me is entirely worthless. It may be said that most of the kinds here named are under trial and it will take time to ascertain their value in different soils, climate, &c. My experience with the Monarch of the West has been very satisfactory; it has much to recommend it. The plant is very strong; does equally well in light or heavy soil; fruit very large and of uniform size; bright scarlet, fine quality, and commands a high price in market. It is a good bearer, and I think will yield as much profit to the acre as any other variety. We may except the Crescent Seedling, if what is said of that variety be true, that it will produce 400 bushels to the acre, which is from two to three times as much as any other kind. I have had but one season's experience with this variety; it is certainly very promising. Having had some experience with most of the kinds I have named, I shall the coming season extend their cultivation. The kinds planted last year for fruiting the coming season, are mostly Charles Downing and Monarch of the West, of which I have an acre of each; I have fruited the Charles Downing ten years or more, and it has always given satisfaction. I consider it one of the most valuable varieties known.

The list of new Raspberries is not as long as that of the strawberries; but it is evident that much progress has been made. In order to get a crop from our best old varieties, the canes must be buried. This involved much labor and expense, and often discouraged the fruit grower from planting largely of one of our finest fruits. We name the following new kinds: New Rochelle and Caroline, as being perfectly hardy, producing very large crops of fine fruit of the largest size. The New Rochelle originated at New Rochelle, Westchester Co., N. Y. My atten-

tion was called to this variety about three years ago. The originator claimed that it would produce three times as much as any known variety. This is a seedling of the Catawissa; fruit of the largest size; color, a dark red or a little darker than the Philadelphia; very firm, and of the finest flavor; the canes are very strong, some of them more than an inch in diameter. It propagates from tips, makes no suckers, and is as hardy as an oak, Carolina: this also originated at New Rochelle, and is said to be a cross between Brinkle's Orange and Catawissa. This is also perfectly hardy, and a prodigious bearer; the fruit strongly resembles Brinkle's Orange; fruit large, bright orange, moderately firm, and in quality as good as Brinkle's Orange. It is a perfect hybrid; propagates both from tips and suckers, but sparingly either way. I have tested both these varieties in my grounds; and endorse all that is claimed for them.

The Pride of the Hudson is another new hardy variety said to be very promising; it is to be sent out this Spring, strongly endorsed by some of our most reliable Horticulturists.

Early Andrews: I have fruited this variety for over fifteen years. It was sent to me by A. G. Coe, of Meriden, Conn. He informed me that it was found in the garden of a Capt. Andrews, a neighbor of his. With me it has proved nearly hardy; fruit medium size, bright red, fair quality, ripening several days before any other variety. I have sent the Early Andrews to several fruit growers, who inform, through my friend Charles Downing, that it is the same as Highland Hardy. If this is so, some one has re-christened the Early Andrews and sent it out under a new name.

A REMARKABLE PEAR.

BY S. B. PARSONS, FLUSHING, N. Y.

In passing through Thomasville, Georgia, on the 20th of March, I was much impressed with the beauty and rapid growth of a variety of pear know there as the Chinese Sand Pear. I could not recognize it as the variety, under that name, with which I had been familiar for thirty years. The fruit of that was worthless, while this Georgia variety is said to be nearly equal to the Bartlett, and to ripen in July. It is said to have been found growing on the coast by M. Le Comte, the well-known entomologist, and believed by him to have been brought from China. A more distinctive name would be the Le Comte Pear. As an ornamental tree it possesses great beauty. Its habit is more pyra-

midal than that of the Buffum pear, and greatly resembles that of the Lombardy Poplar. Its foliage is large, thick, with a light color and glossy stem, which is remarkably attractive. Its vegetation is also very early. Other pears near it had just commenced showing life, while the Le Comte pear was in full leaf. Its most remarkable feature is its great rapidity of growth. I saw some specimens three years from the cutting, and bearing, which were twenty feet high, with a girth circumference of ten and a half inches. I saw others, seven years from cutting, which were thirty to thirty-five feet high, with a girth circumference of eighteen inches, and which had borne several bushels of fruit. The mother plant has borne eighteen to twenty-four bushels. The soil in which they were growing was sandy and poor. Whatever may be the origin of this pear, it is destined to be of great value to the South by its adaptation to a light poor soil, and there is quite a fever growing up for its culture. Its fruit came in small quantity to New York market last July, and brought twelve dollars a bushel. If any one has tried it at the North, I hope he will publish his experience in your journal.

Another plant which gave me pleasure was a *Magnolia fuscata*, seven feet high and seven feet in diameter, loaded with hundreds of blooms, with banana-like fragrance. The tea plant also looked flourishing. The South is full of grand capabilities. When faith and action go together, the whole country can be made a garden.

SLITTING THE BARK OF PEAR TREES.

BY MISS C. E. BREWSTER.

I don't think all trees will bear slitting the bark any more than all will bear "oil." It seems to me that your grounds must bear remarkably sturdy specimens that can bear any thing; as we see children that do grow up into six feet manhood, in spite of paregoric and soothing syrup in babyhood, and tobacco in their callow youth. I do know that we lost a great quantity of cherry trees by slitting the bark thereof, under the eye of a noted horticulturist and warm advocate of that theory, about twenty years ago. We had fruit enough, besides what the birds ate, to use and to sell, before that terrible experiment was tried; and now we have none to speak of. The few trees that survived the ordeal have never borne enough for the birds; in fact they are mere cumbrers of the soil only. Being valuable sorts, we cannot bear to dig them up.

EDITORIAL NOTES.

PEAR CULTURE IN THE NORTH WEST.—We see paragraphs in the papers that the Pear is an utter failure in Illinois, Iowa and Wisconsin. Such sweeping statements are worth attention. The writer of this has seen Pear trees in Michigan as large as the oaks of the forest, and as sure to bear as abundant crops every year as an oak would be to bear acorns. He has an impression that he has seen similar results in younger trees in Iowa and Illinois, but in the Michigan case he has the trees now "in his eyes." Why these should not grow well and bear good fruit on the Western as well as on the Eastern shore of the Lake, is not clear, and it is worth a further inquiry whether there is any such universal failure as here implied, and if so, why?

ENOUGH OF A GOOD THING.—The English, like us, are getting embarrassed at the number of good fruits. Says the *Florist*: "The varieties of new Peaches of American and English origin have become so numerous, that amateurs and others who cannot test them as they appear," are embarrassed. It is easy to get a good fruit from seed. We want no more good ones named and distributed. Only those fruits should be disseminated that are in some respect better than an existing kind, and only a competent authority can decide this.

PEAR CLAPP'S FAVORITE IN CANADA.—Mr. D. W. Beadle, in *Canadian Horticulturist*, says this variety is all that its friends claim for it, in his region, which is St. Catharines. It is hardy, vigorous, healthy, and fruit of superior quality. It ripens just before the Bartlett.

THE LADY APPLE.—American-raised fruit of this variety brought good prices in London, according to the March market reports.

SOUVENIR DU CONGRES PEAR.—Specimens were exhibited before the Massachusetts Horticultural Society last year, which weighed a pound, and measured in length seven inches. In quality it was not found "best," but still "very good." It was raised by Mr. Morel Lyon, Vaise, France.

THE EARLY SEASON.—Among the most remarkable appearances of the season, was an abundance of curculio by the end of April in Philadelphia. With so much time to work, there will be very little chance for an unaided crop of plums. By the same date, myriads of Colorado

Beetles were after the "early worm" in the shape of potato leaves. As fast as a little green speck was seen, a hundred sharp eyed-beetles were after it. It is very unusual to have to go for the Paris green box so early.

SCRAPS AND QUERIES.

PLOUGHING AMONG THE ROOTS OF TREES.—

H. J. R., Riverside, Cal., writes: "As one of the oldest subscribers to your journal, I am tempted to trouble you with a few questions in relation to the cultivation of the Orange and Lemon. The growth of these fruits in orchards is one of the great industries of this portion of the Pacific coast. We have in this colony about 200,000 Orange and Lemon trees in orchard, and about 500,000 in nursery. The trees in orchard are planted about twenty feet apart. Nothing is grown between the trees, and the usual custom is to plough the orchard twice each season with a heavy two-horse plow, and cultivate with a diamond-tooth cultivator as often as may be necessary to keep down weeds or keep the surface of the land loose and friable after each irrigation; as we cannot rely upon growing anything here without irrigation. It has seemed to me that this frequent deep ploughing would destroy the surface roots, and ultimately injure the trees; but in our oldest orchards, six years transplanted, we do not as yet detect any injury.

The seedling trees begin to bear in six to eight years from the seed, according to the care and attention given. Budded trees bear in one to two years from the time of budding. So much for prelude, now from your experience in the cultivation of deciduous fruit trees, would you advise such frequent deep ploughing of the orchard after the trees are planted? Will not budding dwarf the growth of the seedling tree? Would it answer to seed the orchard to Alfalfa, and take an occasional crop of grass, and leave an occasional crop, say during the Winter, to rot upon the ground? We can cut the Alfalfa eight times a year, and on good fields it will yield two tons of dried hay per acre, but requires thorough irrigation to do this. Would like hear your opinion upon these points, and any suggestions you may be able to give in regard to the cultivation of the different varieties of the Citrus family."

[There is no general rule in regard to ploughing orchards. There are many cases where it is absolutely best to plough orchards, and others

where one may absolutely refrain from ploughing them. Then there are cases which cannot be settled so decisively, but it is to be a balance of advantages or disadvantages whether we should plough or not. Ploughing or non-ploughing of orchards is just one of those cases in gardening where nothing but practical skill and experience of one's wants and one's surroundings on the spot can decide.

To give an illustration:—There is in no case a doubt but that a tree has need of all its roots, and more if it could get them; so some people would say, we will sow the orchard in grass, and thus avoid ploughing, which must injure some roots. But the roots are of no use unless they have something to eat; and if we let the grass have the best of the food, there is no gain, and often a loss. In such cases, it is better to plough the ground and destroy the grass, though some roots are destroyed, because the roots left have at least all the food to themselves. But if we are so situated that we can give the grass all the food it wants, and the tree roots all the food they need, then it is far better not to plough the ground, because then you have not only all the roots to work for you, but some cool shade besides. It follows that in those parts of the world where little manure can be had for top-dressing, it would be the height of absurdity to keep an orchard in grass, no matter how great the theoretical advantages might be. The surface should be ploughed to keep down grass and weeds so that the tree may have all the food there is in the soil. All that we can say is, that as a principle of culture, those trees are the healthiest, the largest leaved, every way the best, which, with plenty of food, have their roots the least disturbed.

Budding or grafting does not dwarf Oranges or Lemons, unless a dwarf variety happens to be employed as a scion.—Ed. G. M.]

STOCKS FOR GRAFTING GOOSEBERRIES.—

Mrs. M. E. W., Sublette, Mo., writes: In the GARDENER'S MONTHLY of July, 1875, there is an article from the pen of Albert Benz, Bay-side, L. I., on the subject of grafting gooseberries; and as I am going to undertake gardening in a small way, I, of course, wish to do everything in the best possible manner.

If it would not be presuming too much upon your valuable time, I would like to have you inform me in regard to the stocks used.

What is Ribes aureum, and Ribes Floridanum, and where can the latter be obtained? I have

several catalogues, but do not see them advertised in any of them.

[*Ribes aureum*, is the common yellow Missouri Currant of the old gardens; and *Ribes Floridanum* is the wild native black Currant of the Eastern States. They are used for stocks because the roots are more suited to our hot Summer ground than the foreign varieties are. It is this heated ground which induces mildew in the large English Gooseberries, and when on these native stocks they are therefore mildew-free. They are not common in country nurseries, because there is little demand for them; but any nurseryman who knows his business could generally get them for you, if you give him time enough, as it is part of their business to know where they can get things when ordered by responsible parties. There is seldom anything to be had in the trade at all, that a first-class nursery cannot obtain when ordered by their well-known customers, though you may look through hundreds of catalogues without finding the thing desired.—ED. G. M.]

THE PEAR SLUG.—C. B. J., Camden, Del., writes: The pear slug occasions great trouble and loss in this section. Is there no method of preventing their invasions? People here, very generally, I believe, know of the expedient of dusting with different substances; but this pro-

cess I have found tedious, not always practicable nor effectual.

If you could put our fruit growers in possession of a preventive of these attacks you would confer a great favor, and I should be glad to help make it known in connection with your name. Or perhaps you could communicate a specific through your MONTHLY.

I am not much acquainted with the natural history of this pest. I do not suppose it ascends from the ground, as the first generation of a season that appears on the leaves is very minute. Perhaps in the case of small trees, the emanations of salt placed at the proper time in the trees in small bags would effect something. I have read that Iodine would attract them.

In small nursery trees, I have found it best to jar them off after they had advanced somewhat in growth, and send the cultivator over the ground.

[Does any one know of any thing better than dusting or sprinkling, as our correspondent says these processes are tedious. But we know of no other.—ED. G. M.]

FRUIT PROSPECTS AT BOSTON.—Col. Wilder, under date of May 3d, writes: "Splendid weather! 84°. Peaches, cherries, pears, all in bloom. There will be a small crop of pears, with few exceptions. Anjous are full of bloom.

This the earliest season since 1865, when we cut grass 13 inches high, on 19th April."

FORESTRY.

COMMUNICATIONS.

FORESTRY IN SOUTHERN KANSAS.

BY C. H. LONGSTRETH, FORESTER FOR A. T. AND S. F. R. R. CO.

The subject of Forest Culture is without doubt a momentous question, and one of vast importance, in view of the future wants of the whole country. While there is evidently a growing interest in the subject, there at the same time seems to be a great want of knowledge of just how to commence the growing of a forest, and be successful therein.

In view of these facts, and to encourage the planting and growing of trees in Southern Kansas, the Atchison, Topeka & Santa Fé Railroad Company, in the spring of 1873, established experimental stations at different points along the line of their road, extending from Hutchison

westward, for the purpose of testing the different varieties of trees, learning the kinds best adapted to our soil and climate, and the best mode of culture.

The results of these experiments, running through the past four years, justify the conclusion that forest trees for shade, wind-breaks, fuel, timber and ornament are easily, cheaply and quickly grown; and we are confident that, from a few acres of trees planted and attended to with a proper degree of intelligence and care, the farmer may, in four or five years, supply himself with fuel, and also with much material that will be of service to him about a farm, besides add many times the cost to the saleable value of his farm.

Among the several varieties that have proved successful with us, as far as tested, we would recommend the following as among the best for general planting: Ash, Black Walnut, Box

Elder, Cottonwood, Honey Locust, Osage Orange, Silver Maple, and, for fuel and fruit, the Peach.

The Ash is a beautiful, fast-growing tree, and makes valuable timber, being used extensively in the manufacture of farm implements. It grows along nearly all the streams in Kansas. The seed can be easily gathered from the trees, as it ripens in the Fall. It should be kept in damp sand till Spring, and then planted about one inch deep, dropping ten to twelve seed to the foot, in nursery rows, to be transplanted to the forest at one or two years old.

Black Walnut is a handsome, hardy, fast-growing tree. The valuable properties of its wood are so well known that I need not speak of them here. In a few years from planting the annual crop of nuts will amply pay all cost. The nuts are easily obtained from the trees which grow along the streams, and should be gathered in the Fall for seed, and bedded in the ground, covering them with earth to keep moist till Spring, and then plant two to three inches deep where the trees are to remain.

Box Elder is one of the hardiest trees we have; makes a rapid growth for the first eight or ten years, and is a handsome tree, but seldom gets over thirty or forty feet in height. The quality of its wood is similar to that of the silver maple. The seed can be gathered the same as the Ash, and at the same time. They should be mixed with sand, and kept damp (never wet) through the Winter, in a cool place. Plant as recommended for Ash.

Cottonwood grows rapidly, with little care; makes a quick shade or wind-break, and is pretty good fuel when dry. Young plants are often found along the streams, and may be transplanted to the grove; or it may be easily propagated from cuttings of the last year's growth, which may be taken off at any time in mild weather during the Winter. Cut twelve inches long, and pack away in earth till Spring. Plant in mellow soil, leaving only two or three inches of the top above ground.

Honey Locust is a beautiful, hardy tree, well suited to our soil and climate. The seed should be gathered as soon as ripe in the Fall, and kept in moist sand till Spring, and then planted about two inches deep. The seed should be soaked in warm water till it begins to swell, before planting.

Osage Orange is one of the most valuable trees we can cultivate. It makes a tolerably rapid growth. It is a hardy tree, easily propagated, and the wood is exceedingly tough, hard and

durable, making good fuel, and the timber is of great value whenever strength and durability are required. For the manufacture of wagons and farm machinery, it is said to be the best timber in the world. In its native forests in Texas, it makes a tree two and one-half to three feet in diameter, and sixty feet high. It is usually cheapest to buy the plants at one or two years old, of growers.

Silver Maple is a rapid grower; the wood is fine-grained, and is used to some extent in cabinet work. It is, however, liable to be broken by high winds, and by ice and snow accumulating on the branches. When closely planted in groves or belts, this is less likely to occur. The seed ripens in May and June, and must be gathered and planted soon after, in drills, covering about one inch deep.

The Peach tree grows well on the prairies—makes a rapid growth—and for quick returns is a good substitute for some of the slower-growing forest trees. It will produce a large amount of fuel in four or five years from planting, and the fruit may pay well for all cost of planting and tending. Cover the seed lightly to keep them moist during the Winter, and in the Spring crack all that are not cracked by the frost, and plant about two inches deep.

There are other trees of more or less value that we are testing upon our experimental grounds, that promise well, so far as tried, and may be planted by those who want a great variety, or can afford the greater care and cost necessary to insure success—among which we might name as worthy of attention the Burr Oak, Hackberry, American Elm, Kentucky Coffee Tree, and Ailanthus.

Burr Oak.—The seed of the Oak ripens in the Fall, and should be treated as recommended for Walnut. The Hackberry and Kentucky Coffee Tree ripen their seed the same time as the Oaks, and should be treated as recommended for Honey Locust. The Elms ripen their seed in May and June, and should be treated as recommended for Silver Maple.

Native Trees.—All the trees I have named, except the Ailanthus and Osage Orange, are natives of Kansas, and can be depended upon. These seed can be easily gathered from them all as they ripen.

SWAMP DOGWOOD.

J. T., CHANUTE, NESHIO CO., KANSAS.

Will you or some of your correspondents inform me as to the value or merits of the Swamp

Dogwood? It grows here along the banks of the Neosho River, and I have been told that it grows in the swamps of Virginia. It is of a dwarfish habit, growing from eight to ten feet high; foliage resembles the white lowering Dogwood, but smaller; the flower and berry is white (so I have been informed). They are not quite in bloom yet.

EDITORIAL NOTES.

BLACK WALNUTS AND ORCHARDS.—Correspondents have become frightened about Black Walnut trees. They believe them injurious to trees growing near them. Others growing under, or even close to them, suffer, because the Walnut is a gross feeder, and takes all the eatables to its own table; but it has no ill effect in any other way. We have known of Walnut trees of immense age and size within fifty feet of old apple trees, and both apparently well satisfied with their companions.

PINE LUMBER OF UTAH.—At a recent meeting of the Academy of Natural Sciences of Philadelphia, specimens of boards from the conifers of Utah, were presented from Mr. A. L. Siler. *Juniperus Virginiana*, the common Red Cedar, is precisely like the wood of the Red Cedar of the Atlantic States; though growing so many miles inland, and at so high an elevation. *Juniperus occidentalis*, the Western Cedar, has, however, the heart wood brown instead of a rosy red, as in the Eastern kind. *Pinus ponderosa*, more nearly resembles the wood of *Pinus palustris*, or Yellow Pine of the East. It is known as the "Heavy Wooded Pine," but we doubt whether it is as heavy, foot for foot, as *Pinus palustris*. *Abies Douglasii* is the "Red Pine," and much like, in character and apparent qualities, the Norway Spruce, or "Deal" of Europe. It is evidently a much better wood. *Pinus flexilis* has no common name among the settlers in Utah. The wood is a whitish brown, rather soft, and showing hardly any grain. *Pinus edulis* is the "Pinon" of the Mexicans. The wood is as white as a piece of Linden, and brittle. It takes on a remarkably smooth surface under the plane, and may be of some great use by these peculiarities. The most remarkable wood of the whole is the *Pinus aristata*, or "Cat Tail Pine." The color is almost as dark as Mahogany, and the fibre is curiously twisted and contorted, so that it is difficult to get a piece for a board free from a

flaw; but where a good piece is found, it exhibits a fine silk-like grain, and it would, no doubt, be very useful in fine ornamental work. Mr. Siler remarks that the *Pinus ponderosa*, called "Heavy Wooded Pine" in the books, is known as the "Long Leafed-Pine" in Utah.

SCRAPS AND QUERIES.

A LARGE CHESTNUT TREE.—In Byberry township, Montgomery county, Penna., a chestnut tree, on the farm late of N. Richardson measures 20 feet in circumference four feet from the ground, which is the smallest place. This tree is traced back to four generations, which have picked the nuts from under it.

THE BIRCH.—As we look on these trees generally in our gardens, or even in our forests, we have little idea of its great use of the birch to man. A lumber paper tells us that the birch is a true hardy mountaineer, loving the rugged mountain side and luxuriating in the wild savage glens of the cold North. It is the last tree seen on approaching that hitherto inaccessible spot, the North Pole, disappearing entirely at the 70th parallel. The ancient Caledonians made canoes of birch branches and bark, covering the outside with skins. From birch they made every imaginable kind of implement and vessel. The writer has seen, in the remote part of the Highlands, cottages in which every utensil was made of birch, all being cut out of the solid timber in the most primitive fashion. Fancy, if ye can, ye *élite* of the modern tea-drinking world, your cups and saucers composed of wood. Yet such was once the fashion, and our glorious ancestors "punch bowl" and "bicker" were made of such primitive material. It is recorded, that during the years 272, 300 and 310, years of great famine, the inhabitants of Britain were compelled to eat birch-bark. In Sweden, it has been used to mix with corn for food. In Russia and Poland, this tree enters largely into constructive arts, from the fittings and furnishings of the palace to the manufacture of the tobacco pipe.

PERSIMMON GUM.—It may not be generally known, says the *Rural Messenger*, of Petersburg, Va., that the common Persimmon tree of this State (*Diospyros Virginiana*) yields at a certain season a gum, which, when boiled and strained, afterwards being dried in thin layers, is equal in adhesive quality to ordinary gum arabic of the shops. The method is to cut with an axe or

broad chisel cups in the body of the tree, from the root up as high as you can reach. Do this in the spring, and in a short time the cups will be filled with the crude gum, which should be removed before becoming too hard. The gum should then be placed in a small iron or earthen vessel, and this be put in a larger one containing water, which must be raised to the boiling point,

frequently stirring the gum in the meantime. In about an hour's time remove from the fire and strain the liquid through a coarse cloth to remove the sediment and impurities. Spread it thinly over the bottom of plates or dishes to cool and harden, after which it may be easily removed, and can hardly be detected from the gum of Arabia.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

THE SECULAR CHANGE OF VEGETATION.

BY MR. MARC, BUDA-PESTH, HUNGARY.

The periodical change of vegetation has often been discussed, and its process has been confirmed in every country. Thus *Grisebach* in his classical work "*die Vegetation der Erde*," relates the fact that in the valleys of Guiana a secular change has taken place between woods and grass. This is not an isolated fact; on the contrary, many more are extant, and of the most patent ones I shall here put down a few.

In the lowest strata of the moor and peat lands of Jutland, that much split-up tongue of land, in Western Europe, trunks of pine trees, *Picea excelsa*, Lamb, have been found, proof of former existence of pine woods. That tree not only is nowhere to be found any more in Jutland, but not even tradition hands down any knowledge of its former existence there. On the top of this layer of pine trees, trunks of the German oak are found. There are but few isolated trees of that oak found in Jutland nowadays. The present woods are mostly Beech.

Another tree that has disappeared is *Picea fuc-nifera*, Rick; there must have been once vast forests of it on the eastern shores of the Baltic, and in some sections of Southern France. Its precious petrified rosin is our present amber.

The same process is now going on in New Zealand with the Kauri fir, *Dammara Australis*, Lamb., it disappears and, spite of pains and trouble taken, will not succeed any more when planted. In places where that tree does not exist any more for a long time, clumps are found of its rosin, in a more or less hardened state. Wherever that fir disappeared, there appeared *Pteris esculenta*, the roots of which serve the Maoris as food. A poor substitute for the valuable ship-timber of the Kauri fir.

Another evidence of the law of vegetable change is the quick acclimatization and aston-

ishing spread of plants which have migrated into distant countries. This is the case, notably with *Cynara scolymus*, Linn., artichoke, the seed of which is easily transmitted by the wind or by adhering to the coats of animals. Thus, it was carried to the pampas of La Plata by a donkey, about the year 1769. Much to the chagrin of the Gauchos, and to the disadvantage of their cattle industry, this plant now covers very many square miles. It seems, in fact, to have found there a most favorable soil, for its dimensions and development may be called gigantic when compared with its native ones. The traveler through such districts of the Pampas must not leave the narrow-trodden paths; if he does, he will be lost amongst the dense and growing artichokes.

Erigeron Canadensis has been imported into England in the body of a bird; has from there spread all over Europe, and is now one of the most troublesome weeds, found everywhere, even on roofs and old walls.

Xanthum strumarium, Linn., and *X. echinatum*, Murr, came from the lower Danube, by droves of pigs, into Hungary, and now troubles all pastures as far as Northern Germany.

That water pest, *Elodea Canadensis*, Mich., has multiplied enormously in the waters of England, Scotland, Belgium, Holland and Germany, often stopping up entirely drainpipes, and, in canals, driving before it all other vegetation.

The "Bulletin de la migration des vegetaux" make mention of *Lindernia pyxidaria*, Linn., a *scrophularæ*, as having covered toward the end of the last century the waters of the Sevre, near Nantes, where that river joins the Loire. It is five years ago that a botanist of Nantes found to his surprise that this *Lindernia* was driven out by an American *Ilysanthes*. M. Hedates found in 1869, a great many of these *Ilysanthes*, on the slimy shores of Mayenne, and amongst them choked the native *Lindernia*.

On the other hand, how many migrations of

plants have not succeeded, or have occurred without further consequence? The last Franco-German war furnishes such an instance. About 163 different species of plants were imported into France in the forage of German horses. Not finding favorable elements there, they gradually disappeared, all but seven of them, which are now citizens of French soil.

These phenomena of vegetation can be explained by physiological laws, by the eternal mutation of chemical and physical properties of the soil, and by climatic influences.

There reigns in nature a constant motion, a continual change, the laws of which are fixed and immutable. The change already of one single factor of the conditions of vegetation of a place or country produces a corresponding change in its plants or in their vitality. Take the trouble and mark on your next meadow the spot where a certain plant now grows, return to it after one or several years and you will not find it there any more, but replaced by some other one. The same takes place in the woods, only trees live longer, and so the change takes more years. Every pomologist knows that, in the place of a dead fruit tree, no new one of the same kind can be planted without giving it new soil.

Every plant, in accordance with its specific individuality, appropriates to itself such elements of the soil as are most suitable, returning to the soil the unsuitable ones, which, however, are absorbed in their turn by other and different plants.

This explains a steady change of our earth's green dress.

Greater attention to this process and more precise records of its details seem to be most desirable.

SEEDING OF WISTARIA SINENSIS.

BY A CORRESPONDENT, BOSTON, MASS.

The fact that *Wistaria sinensis*, when supported, that is, grown as a climber—if I understand the phraseology—is seedless; while the "tree" or self-supporting plant bears fruit abundantly. This, which Mr. Meehan alludes to in his paper "On the Laws Governing the Production of Seed in *Wistaria sinensis*, (see GARDENER'S MONTHLY, page 152), is hardly of very general application. The first time I ever saw *Wistaria* in fruit was two years ago, when I saw a plant well covered with pods running over the porch of a house in New Jersey. In this latitude (Boston), the *Wis-*

taria rarely fruits, but last year was exceptional. Three standards of "Tree *Wistaria*" came under my notice—two bore no fruit, and the third, although a very large plant, had then a dozen, while two supported plants in the same neighborhood were loaded with pods.

[Newspaper abstracts seldom do more than let the reader know that a paper of the nature indicated has been offered. The paragraph we gave, was just as it appeared in our contemporary, and as mere news. The *Wistaria* fact was merely given to illustrate the different effects of vegetative from reproductive force; and we fancy, if our correspondent gets an opportunity to read the whole article, he will not find much to object to. In relation to the *Wistaria* itself and its seeding, we are not sure just now that the original paper says the *Wistaria* never produces seeds except as a tree, any more that it *always* seeds when grown on a tree; for we certainly know of tree *Wistarias* which do not seed sometimes. But the words, if employed at all, are in a general sense. The principles sought to be illustrated in the paper, will show that there cannot be this exact dividing line, for it will be seen that it is not a question of support, or non-support, but of exhausted vegetative force that governs seed production. It may, and no doubt often does happen, that this exhaustion will occur as well or better on some vines which have run over trellises than in the self-supporting case; and when this occurs Mr. Meehan's paper will show the plant ought to be correspondingly more productive.—ED. G. M.]

EDITORIAL NOTES.

NEW VARIETIES BY GRAFTING.—The experiments on apples, by the editor of the GARDENER'S MONTHLY, show that new varieties can be obtained by grafting; and observations, previously recorded by other persons in various departments of culture, prove that the very old idea is not without some foundation. During the visit of the Emperor of Brazil to the sugar plantations, he communicated to some gentlemen there that new varieties of sugar-cane had been originated by grafting, and promised to send the documents in relation thereto. These have been recently received and translations made, by which it appears that a variety known as St. Julian was obtained in that way. It was raised by Commander Julian Ribeiro de Castro by splice-grafting; the Cayenne being the stock and the Molle being the scion. The

eyes and leaves of the product were of the Molle, but the stem and the size of the Cayenne. In this case, the two eyes were selected and split in halves, as taken by the editor of the GARDENER'S MONTHLY with his apple grafts, and the alternate halves united before grafting. Trials were made to set these united halves as cuttings, but no hybrid results came. Only when grafted on a growing stock did hybrids result from the halved pieces.

In order to test the matter, the Imperial Agricultural Institute undertook to investigate it. Accordingly, in 1867, Dr. Glasl, of the *Botanical Garden*, grafted a number between October and January, at different times. Many various plans of grafting were employed. Dr. Glasl concluded that the results favored the idea of hybridizing by bud-grafting, whereupon there was a committee of learned men appointed, who reported that, after long examination of the specimens themselves, they concluded that the theory was untenable, because inconsistent with the views of Mirbel and Du Petit Thours on Vegetable Physiology. They found there was no absolute union of parts, and consequently no grafting. The variation, therefore, they regarded as a mere sport, just as likely to occur in a piece with another sort fastened to it, as in many plants there is change without grafting. The committee, therefore, concluded to report against the graft-hybrid idea, and Dr. Glasl signed the paper with the rest.

For our part, and for the reasons given in the first part of this notice, we regard the conclusion as unsound. We see no reason why hybrids may not be had from bud-grafting the sugarcane, and, therefore, have made this condensation of the facts so as to draw attention to the subject. We have no doubt of the soundness of the teachings of Du Petit Thours and Mirbel. We should not want to discuss that question; but we do want to see a few experiments tried by different people, which would take no more time to make, than to read through a volume by these celebrated naturalists.

HAIRS OF PLANTS—THEIR FORMS AND USES.—Under this head, a valuable paper by Prof. Beal is contributed to the May number of the *American Naturalist*. Representations of a great number of hairs are given, many species having forms, in many respects, peculiar to themselves. As to the uses of hair and hair-like glands, Prof. Beal asks, "May not these glands also draw nourishment from the particles of dust

which fall on them from the ground?" and he refers to Mr. Darwin's experiments to prove that "some of these plants (Tomatoes, Tobacco, Petunia, and many others) do certainly absorb and appropriate gaseous and liquid bodies." Prof. Beal believes that there is a great mass of useful knowledge yet to be obtained from a study of these appendages.

ABIES AND PICEA.—The reason why we have to call the Spruces Picea, and not Abies, and the Firs Abies, and not Picea, is thus given by Dr. Engelmann in his recent monograph on the Firs of the United States:

"I follow Link (*Linnaea*, xv., 525, 1841) in his name, definition, and circumscription of the genus, which seems to be a very natural one, comprising the Silver or Balsam Firs. The synonym Picea (Don) in Loudon, *Arb.*, iv., 2329, 1838, is the older name, and enjoys the Linnæan prestige, (but is contrary to classical Plinius, &c.,) and philological authority. The name Abies is generally adopted on the continent of Europe, while Picea was heretofore principally used in England, but is now being abandoned. Picea, Link (the same Abies, Don), is the proper name for the Spruces. Tournefort, the elder De Candolle, Gray, and others, comprise under the name of Abies both Firs and Spruces. The generic distinctions between them are based both on the floral and fruit characters, as well as on the leaf anatomy."

THE ORIGIN OF THE PRAIRIES.—We rarely meet an intelligent man who has not made up his mind as to how the prairies were formed; and further, rarely found one person develop his theory that did not unexpectedly receive a "poser" from some wily antagonist. Prof. Lesquereux has written on the subject, and now O. P. Hay, in the *American Naturalist*, offers some reasons why belief in Prof. Lesquereux should be forbidden.

BOTANICAL CONTRIBUTIONS.—Professor Asa Gray contributes an account of some new plants to the April number of the Proceedings of the American Academy of Arts and Sciences. No less than seventeen new species of *Astragalus* are described, some of which will probably prove of gardening interest. *Acanthaceæ*, not a large order in the United States, has two new genera added to it.

PARASITE ON THE CODLING MOTH.—Mr. Chas. D. Zimmerman, of Buffalo (Pine Hill Nurseries), has discovered a new and useful enemy to the Codling Moth, which latter is so

great an enemy to apple cultivators. It is a black cannibal beetle, the *Tenebrioides laticollis*, which eats up the caterpillar and empties the chrysalis of the Codling Moth.

ABIES REGINÆ AMELIÆ.—A correspondent of the *Gardener's Record* says that in Greece this species will sprout up and form a new tree after the trunk has been cut down, and that it is the only species of Conifer that will do this in that country.

SCRAPS AND QUERIES.

THE DWARF JUNE BERRY.—Mr. Sereno Watson kindly contributes the following note:

"The 'Dwarf June-berry,' of page 141 is doubtless *Amelanchier alnifolia*, Nuttall, a species very distinct from any form of *A. canadensis*, abundant in all the mountains from Colorado to California, and fruiting fully.

Another correspondent says: "There is a very good account of the Dwarf June Berry in the *American Agriculturist*, April, 1871, p. 144. I tried it for three or four years, and in all that while did not get a quart of fruit. At the first hint of ripening the birds go for the fruit, and not one do they leave. I got out of patience, and threw all out but a few to keep as flowering shrubs, and they are very floriferous and worth growing as such. It suckers very finely, which is an answer to the nurseryman's question, 'Will it cut?'"

And we have the following from Mr. H. A. Terry, Crescent City, Iowa:

"Since I wrote the article in regard to the Dwarf June Berry, in your May number, I have learned that tree agents are preparing to flood our State with plants of the true Whortleberry or Blueberry of the East, which are entirely worthless in this State. Now what shall we do to prevent the people from being imposed upon? Dr. Hall, of Davenport, has been growing this Dwarf June Berry for several years, and sending it out as the true Huckleberry, making it appear that the Huckleberry succeeds in our State; and now the tree agents are taking it up, and the people will try it on the recommendation of Dr. Hall. If you have access to the Report of our State Horticultural Society for 1877, I would suggest that it would be very proper for you to publish the resolutions on page 205 of said report. Unless I forget it, I will at the proper time send you more plants of the genuine Dwarf June Berry."

HYBRIDS.—A correspondent writes that he has

"crossed *Amaryllis Johnsoni*, and *Richardia Æthiopica*, and last week planted four perfect seeds." The families to which these plants belong are so very widely separated that it is more probable that the seed-bearing plant, in spite of all care, received some of its own pollen. Still, as our correspondent has the seed, let him by all means wait and see what it comes to. It takes two or three years of very good growth to flower a seedling *Amaryllis*.

LIGHTNING.—Miss B. asks, "can the Beech tree be struck by lightning?" We are almost sure we have read somewhere of an authentic case of a Beech being struck by lightning. There is really no reason why it should not be liable, and doubtless people in Indiana, or other States where the tree is abundant, could give instances within their own knowledge.

ROBIN HOOD PLANT.—J. G. D., King of Prussia, Pa., says:—"I wish to know if there is a plant called Robin Hood. Have been informed that it is used by florists in the making of bouquets."

GALL ON THE WILD CHERRY LEAF. F. McM., Fair Haven, N. J., writes: "Would you please inform me through the GARDENER'S MONTHLY, what it is, and what causes the growth upon the Wild Cherry leaves enclosed?" [These are pouch-like galls, made by some small fly in which to deposit her eggs.—ED.]

ROSE GALL.—A correspondent sent us, some time ago, a beautiful burr-like gall on a rose leaf. Any such pretty thing sent to the writer of the following letter from any reader of the GARDENER'S MONTHLY will be appreciated by Mr. Bassett.

Waterbury, Conn., May 6, 1878.

"The galls seem to be the *Rhodites bicolor*, but this species is not common here, and I have never seen young galls on our rose-bushes, and the mature ones always appear to come from a bud rather than from a leaf.

I shall be greatly obliged if you can send me some of these galls late in the Summer or in Autumn.

The gall-flies of *Rhodites bicolor* winter in the galls, and the flies made their appearance ten days ago (here) from galls collected this Spring.

I should be pleased to hear whether the Strawberry has a gall on the petiole in your district, also if there are any affecting the canes of the various varieties of red Raspberries.

Diastrop'us turgidus, Bassett, is found here on the "Philadelphia" and the "red Antwerps," and farther north on the common Wild Red."

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

FROM OREGON TO WASHINGTON—A GLIMPSE OF THREE RIVERS.

BY FANNY E. BRIGGS.

From Salem to Portland by rail, Feb. 16th. The country that, last August, was so refreshing to the eye after the scorched plains of California was now promising, rather than beautiful, presenting chiefly an alternation of newly-sown wheat-fields, and forest lands in process of clearing.

Oregon City, one of the oldest towns in the State, is the most picturesque in situation I have yet met with. Here are the falls of the Willamette, and a line of high, rocky bluffs rise abruptly, leaving only a narrow strip of level ground along the river. The railroad is built on this. The town is wholly on the bluffs, and is reached by long flights of stairs, some of them set zig-zag in upright frames. The town is neat and pretty, with gardens, shade and fruit trees in abundance. The rocky face of the bluff is covered with mosses, ferns, and vines, and two or three little silver ribbons of mountain streams leap sparkling from its brow.

From Portland twelve miles down the Willamette to its confluence with the Columbia. The meeting of two such rivers is a theme for the poet's pen. Leaving their native mountains so far asunder, flowing onward through rocky gorges and dark forests, gathering tribute as they go, here they unite at last, and the great Ocean rolls in its waves to meet and embrace them.

Twenty-five miles more down the Columbia, its banks rising in bold precipitous cliffs, or clothed with dark fir forests to the water's edge, the sea-gulls sweeping round us, or diving for their prey. Scenery too lonely and sombre to be termed beautiful, yet nowhere unworthy the majestic river. Now we turn northward into Lewis river. It is a small stream, and very crooked in its course. Oaks and other forest trees mingle with the ever-present firs. Above high-water mark every trunk and bush is clothed with moss, and old trees are so densely matted with this moss, that great tufts of fern find root in its masses.

The little Hydra, true to its name, winds in and out the narrow, crooked river, and lands us safely at La Center, eight miles from its mouth.

The bank is steep and high, and there is just enough level ground for the street and its row of buildings, and the town lots run up the hill, and look over the tops of the houses.

Now we are out among the giant firs, three miles from the river. A young growth of fir is so closely set, and densely branched as to form a perfect hedge, almost impervious to light, or to any living creature. As growth advances, the lower branches die until the wood becomes only a collection of bare poles, with each a little tuft of green at the top. Then I suppose that Nature begins the course of selection that results in "the survival of the fittest," and a fir tree in its perfect maturity is a noble and beautiful object. Towering straight upward, two hundred, and even three hundred feet, with a regular and beautiful taper of which the eye never tires, and though really large in girth, they are so tall that they seem slender, and have even an appearance of airy lightness as they wave to and fro in the wind.

At some time long past fires have swept over great tracts of these Fir Forests. A dense growth of underbrush has covered the ground, and the huge charred trunks encumber it, yet many still remain standing, black and hideous. These "burned districts," however, are preferred, as being much easier to clear.

The climate is mild, such hardy flowers as daisies blooming in gardens all winter. Now, early in April, deciduous trees are nearly in full leaf, and many shrubs in flower, the most conspicuous being the Dog-wood (*Cornus Nuttallii*); the most beautiful the Oregon Currant (*Ribes sanguinea*). Of smaller flowers, *Trillium grandiflorum* is most noticeable, and Golden Club (*Orontium*) in low places.

EDITORIAL NOTES.

EUROPEAN NOTES, BY THE EDITOR.—No. 10. —As we walk through the streets of our leading American cities in these, our times, it is not unusual to read that Hong Wing, or Hang Lee has a "Laundry," and you may enjoy from the street the sight of a pig-tailed head, placed on the top of a sort of nether garment, squirting water from its mouth on the whitened linen before it. In Paris you read it as "*M. Blanc, blanchiseuse*" and the frequency of these "*Blanchisseries*" is suggestive of a very cleanly set of people. What struck me as singular was that

what I took to be the "washer-woman" was always a big, burly man, who seemed to be lazily sitting in the street door, while a dozen or so of delicate girls plied the implemenents of their trade within. It did not look right to see the "washer-woman" having so easy a life; but when I saw him arranging a little bouquet, and placing some pretty flower pots in one of the windows, I felt sure there must be some good in his heart, and I finally found that he was not the "woman," but the one who took the heavy goods home, and did other unwieldy work. It was a lesson how easily one who goes hurriedly through a strange land, may be mistaken in his impressions, and it makes me very careful how I put down my experiences. But I think there can be no mistaking that the love of the French people—Parisians at least, for flowers is a very universal one, pervading all classes, from the highest to the lowest alike. The roofs, the windows, the backyards—wherever it is possible to stow away a flower, a flower is found. I was interested in a small shoe-mending shop. It was so small there seemed scarcely room to "turn round." A narrow cot bed at the end, indicated that the shop was his "castle" as well. He was sitting on its edge drinking coffee with a crust—the bread, by the way, being all crust in Paris. It was evident that all the room possible was needed in his little business, but he spared of this treasure for his flowers. He was willing to spend even his alabaster box of ointment on that which he loved, and thus his little window and shelves were full of floral beauty. Of course we can see instances of this pure devotion in other lands, once in a while, but I give it here because it is not exceptional. It is rather the rule in Paris.

It is on account of this universal love for flowers that the flower markets are so great a success; and those who go to Paris without seeing the flower markets lose a great treat. There are a large number of them in different parts of the city. They are given up wholly to flowers. The one I have just now in my mind is in the "Place Madeleine." The broad square is paved with artificial stone, and very neat iron pillars support as neat slate roofs, so as to make shelter from sun and protection from rain, but open on every side. Familiar names showed that the stands were occupied by the best classes of French florists, but the rare and choice plants themselves told an intelligent story, endorsed, as we might say, by the attendants, whom I found to have a

much more correct knowledge of the plants they were handling than is usual among the sellers of plants on the street corners, or ordinary markets of other lands. The classes of buyers, too, were evidently high. Ladies, elegantly attired, and attended by their servants, were making purchases as freely as those of more limited means, whose sou was as much to them as the Napoleon to their neighbors. And it seemed to me that good and choice flowers brought higher prices than such do in our country. Of course the poorer class of articles are cheap—very cheap. A bouquet, tolerably well made up of ordinary flowers, I was asked 35 centimes for; and as I walked away the saleswoman called after me, "then what will you give me for it?" as if I had thought the eight or nine cents of our money too much. But then there were plenty of bouquets that would have taken a dollar and a half or two dollars of our money to buy. Five francs, or a dollar, buy very fair bouquets of half-blown roses. Palms and rare ferns were very common among the higher priced plants, and were found, I was told, to do much better as room-plants than the ordinary flowering things. The most common articles were (it was July) small India rubber plants, *Aralia papyrifera*, Forget-me-not, Carnations, *Fuchsias*, *Camellias*, *Marigolds*, *Geraniums*, *Jasmines*, and among pretty things in great abundance not so often seen with us, the *Eucharidium*, a *Clarkia*-like plant; *Convolvulus minor*, grafted *Mesembryanthemums*, *Veronicas*, *Viscaria oculata*, and the true double white *Oleander*. In many cases the growth of the plants would do no discredit to some of our horticultural exhibitions. On one pot of scarlet *Verbena* I noticed twenty heads of flowers, all in beautiful bloom. Candytufts and Venus' Looking-Glass, and a hosts of common plants, made up the general view. Cactuses and succulents generally seemed very popular; our old friend, *Rochea falcata*, with its beautiful crimson flowers, was quite common, and the *Crassula coccinea* was a very common plant indeed. The pretty way in which the plants are offered, sets the market off. Many of the pots are washed clean, and enveloped in pure white paper. The leaves and flowers peeping out of the top like the fabled fruits from the mouth of the cornucopia, gilding even the Lily, and adding fresh beauty to the handsomest flowers. The market is thickly planted with the *Pawlonia*, our Blue Trumpet tree, and is an agreeable change from

the everlasting Sycamore and Plane, beautiful as in themselves they are.

In another part of the city, up by the Bois de Boulogne, are the gardens of the Acclimatisation Society, which are well worth seeing, as it is thought to be a model by many for imitation here. It is a sort of stock affair; but is nearly or quite self-sustaining by low admission fees, 50 centimes. It is really not much more than a zoological garden. The "Acclimations" we fancy, do not go for much. In some particular departments, the collections are tolerably full. Imagine a vineyard for "testing" varieties, in which were growing fifteen hundred and eighty-four kinds of grapes! The large glass house was prettily laid out with winding walks, rockeries, ferneries, and with most of the plants, such as Camellias, Araucarias, Acacias, planted in the open ground. It would no doubt be a charming Winter garden; but imagine a climate where a large house like this needs no heating apparatus and then do not wonder why we "do not see such things so often in America;" so with the flower markets. People who go to Paris, come back surprised at the lukewarmness of the American people, and large "flower markets as in Paris," in all our large cities are being continually urged. But it is not that Americans are not as fond of flowers as the French, but with our houses closed from the frost in Winter, and the sun in Summer, window and house gardens, as we see in Paris, is impossible.

I must, however, leave all the nice gardens and parks, public and private, to take the readers to the Jardin des Plantes, before we say good-bye to this fairyland. After a grasp of the hand of good old Mons. Houillet, whose name in connection with many new plants, the cultivator so well knows, I was fortunate in finding in Mons. Neumann, assistant Director, one of my early companions, who, not like so many of whom I inquired in my travels, had not yet gone to "the Spiritland." It was a treat to him to have to scour up his rusty English, and me once more to hear my mother tongue. The gardens are full of celebrated trees—historical in their botanical relations, accounts of which are neatly painted and attached to them. Here is a "Judas tree," 7 feet round, which the plate tells us was planted by Buffon in 1775. There is the first Robinia—our Yellow Locust—nine feet two inches, round, "planted by Jean Robin, in 1601." Connected with the gardens are museums of science, and in them rare horticultural remains find a place. Here there is

preserved a piece of the celebrated Beech tree which lived six years after being completely girdled, to the dismay of vegetable Physiologists, who were sure it ought to have died within twelve months after; and then there is the trunk of a Date Palm, sown in 1810, and died in 1872, having in that time made a stem of nine feet high. Many things, alas! died in 1872, for the Siege of Paris was hard on the gardens. The shells of the Germans had no respect for glass, and the tenderest plant fell into the arms of the frost king, as the whole city did into the arms of the German emperor. Of course, the gardens, grounds, and museum buildings are not what they have been. Military troubles can do in a day what it takes weeks to restore, but the French government is doing a great deal to revive the ancient glory of the gardens, and large numbers of workmen were digging foundations for new buildings and repairing the old ones. In the Botanical department, large letters told of the "Herbier Durand," the gift of the former Philadelphia Botanist as a sign of his patriotic love for the land of his birth. Here encased was the chief work of a lifetime. I may be wrong, but I have an impression that it has been but little used, and it led me to think whether it would not often be better to donate these scientific remains to active workers, but whose means may be limited, than to load down public institutions which perhaps regard it as a favor to you to receive them. I know of a Philadelphian who took this view. He wished before his death to arrange his effects. His scientific material did go to a public institution, but the books went to a worker. There will be little future "renown" perhaps, in this case to the benevolent Quaker who took this course; but he has the satisfaction of knowing that his act is being made such use of now, that thousands are being benefited by his good deeds, when not a score perhaps would, had his books been buried under the dust of some public library shelves. The arrangement of the grounds is much more in view of Botanical science than are those of many similar establishments in England; yet the many beautiful specimens in the plant houses, the shaded avenues of Linden and other trees, the nicely ornamented grounds in connection with the zoological department, make the gardens a very popular place of resort. At the time of my visit, the houses were gay with orchidæ, and the aquarium drew large numbers of visitors by reason of the blooming of a beautiful rose-color variety of

the sweet water Lily. It was marked *Nymphaea dentata*. The botanic garden proper is divided into sections for the testing of various things. There is a vegetable testing ground. Lettuce, cabbages and such things, were growing together in great variety, all neatly labelled for the instruction of whomsoever might look on. Then there were all sorts of plants used in the arts, in commerce, in medicine, and in the various pursuits of man, all neatly labelled. These labels are of different colors so as to indicate the different uses of the plant. A green color may indicate a poisonous plant, a yellow an edible one, and so forth; and charts explaining the color are freely placed about the grounds.

It was pleasant to notice in Paris how her horticulturists and agriculturists and her men of science generally, are honored. Streets, squares, public buildings are named for them; and thus, while you may be drinking from the Fountain Cuvier, you are reminded of how great were the benefits which the science of these great men conferred on the people at large.

I have no disposition to underrate America. Indeed, after careful comparison of all sorts of things, I feel that in very many things we are far superior to Europe, and in many things, too, in which we are very apt to underrate ourselves; but in this matter of honoring science and the useful arts by public respect to its professors, I must say we are a very long way behind the French people.

A SMALL FRAUD.—“For ten cents or three for a quarter,” the brokers and bankers of Philadelphia, near the “Exchange,” were purchasing sticks of the common Sweet Gum, one day last April, on the assurance of the street vender that it “bore a large blue flower, so deliciously scented, which would burst into beauty in one week after the stick was planted, and scent the whole house from cellar to garret with a delicious perfume, and which the buyer would not be without for \$100.”

The writer of this being invited to “invest,” spoiled the fun by incautiously observing: “I will give you one minute by the watch to leave, or you shall be arrested for swindling these people.” Without a word, the vender gathered his bundle of sticks and departed, to the astonishment of the crowd, who, with the purchased treasures in their hand, looked on in wonder, and some inquired what it meant, and whether their “choice alligator plants” were not what they ought to be?

Mentioning the matter to his Honor, Mayor

Stokley, he said if the writer of this would prosecute he would send a detective to buy a branch, for he did not want complaints so much as evidence of guilt. This struck us as very reasonable, and a detective went along till we found the lively young man sitting down on a corner attempting no business, but merely answering questions put to him. Of course we stood back while the detective went to work, but in spite of all encouragement the flowers would not be “blue” nor would they be “scented.” The perfume of the business had vanished, and then, as the detective reported, that “Sam Madiera spoiled the business, for when he asked the name of the plant and the vender said it was the Florida Alligator plant,” Sam, who seems to have smelled the alligator in that wood pile, “wanted to know what was its name in New Jersey?” So we walked away without our man.

On our way to the Mayor's office we passed a hardware store wherein one of our little folks had exchanged a quarter dollar for a pocket knife “warranted pure steel,” the blade of which bent like a piece of pewter; further on was a store in which beautiful fabrics were displayed and “only 50 cents a yard” noted thereon, and which our better half thought she bought, only it was not from that piece, “but just the same,” as the polite attendant assured her,—but which proved in the end to be a much more worthless article; again we came to the office of a periodical especially “down on humbugs,” which advertises that it has “a circulation of twenty thousand copies,” when it is well known to those in the secret it has not five thousand; and finally as we were musing on these things, during our street walk, we came on the poster of the great showman, and from the pictured lips we heard the voice “if you give 25 cents worth for 25 cents, it is honest. If people are fools enough to believe they are to get a dollar's worth for a quarter, it is no business of yours!” We did not stop to decide this very questionable bit of morality; but it was clear that if this street man gave “a stick worth ten cents, for ten cents, and his buyers were fools enough to believe it was worth \$100,” there was no difference that we could see between him, Barnum, newspapers, and tradespeople generally; and we were rather glad than otherwise, that the ten cent swindle got off on that occasion, while so many dollar ones flourished everywhere around, and were held to be quite respectable besides. The curiously corked bark of the branches

of the gum made it well worth ten cents to the citizen who had never seen it.

STEALING SNOWDROPS.—Two men convicted at Maidstone, in England, recently, of digging up Snowdrop roots in a private garden, were recently sentenced by an English Judge to seven years' penal servitude. This is in striking contrast with the law of a Philadelphia court, where a systematic swindler, of several years' duration, was given a comfortable rest for sixty days, instead of servitude or hard labor; and with another case, where the same Judge Thayer actually discharged a prisoner who had stolen pear trees from a nurseryman, on the ground that Pear trees were real estate, which a man "could not steal." When the Snowdrop thieves get out they will probably emigrate to Philadelphia.

GARDENERS AND FARMERS.—Mr. Peter Henderson made an admirable address before the American Institute Farmers' Club, on the 29th of April. Besides the excellent practical hints as to the formation and management of farm-gardens, he made a strong point on the fact that many of the best men in the garden business were originally farmers, and even from other ranks have some of the best recruits been drawn. Of an old New York firm he says:

"This I know to be the fact, in scores of instances where the business of nurseryman, market gardeners or florists was, as it were, just forced upon the farmer by his village neighbors desiring to buy the products of his garden.

The original proprietor of one of the largest seed-houses in the city of New York emigrated from Scotland some time about the beginning of the present century. He was a nailer by trade, and was entirely ignorant of anything pertaining to seeds or gardening; but one day, coming through the Bowery, then half farm, half city, he saw a Rosebush in a cottage window. It was a Rose in the wilderness, for probably there were not a score more in the city of New York. He went in and bought it for 50 cents, took it home, painted the pot-green, and placing it in the window of his nailshop, quickly sold it for a dollar. This was easier work and better pay than nail-making. He started out daily, buying plants of all kinds, always painting the pots green (a practice that modern science would frown at), and doubling his money rapidly.

From plants, the transition to dealing in seeds was natural and easy, so that in less than twenty years from the time this humble Scotch nail-

maker had purchased his Rosebush in the Bowery, his seed-house had become the largest on this continent.

AN EXCEPTIONALLY HONEST MAN.—A Mr. W. V. Andrews, who signs himself "Cor. Secretary of the Long Island Entomologist's Society, U. S. A.," sends a communication to *Hardwick's Science Gossip*, advising the English people not to use Paris green in case the potato beetle appears there, as "its use is entirely unnecessary. For small plots of land, hand-picking by boys and girls is efficacious, and without danger, for I do hope that your readers are not believers in the foolish stories told of the beetle being poisonous. For larger lots, an ordinary butterfly bag-net, swept gently along the potato-tops, will capture more beetles in an hour than Paris green will kill in a week." He then goes on to tell how Paris green came to be used in this country, in these words:

"Mr. Rye tells you that Paris green is a favorite remedy here, but he does not understand the American mode of doing things. Some State entomologist or other probably had a friend in the oil and color business, and gave a friendly puff to Paris green. Then the oil and color man advertises in some agricultural papers that he has the 'never-failing exterminator' of potato bugs—Paris green, and the editor of that journal at once strongly recommends it. You do not do things in that way in honest old England, but we do here."

Paris green was first recommended in the *GARDENER'S MONTHLY*. We doubt whether any advertisement, not merely of Paris green, but of any "oil or color man," ever appeared in its pages. We have been a pretty close reader of the leading agricultural papers of our country for years, advertisements and all, and we have rarely seen an advertisement of Paris green. At any rate, we are quite sure there was at no time any necessity for "editorial notices" to make it go. If they have any room for another honest man in honest old England, America can very well spare this Mr. Andrews.

SCIENCE IN THE DEPARTMENT OF AGRICULTURE.—We note with great pleasure that general Le Duc has appointed Prof. Riley as Entomologist to the Department. With such men as Riley, Dr. Vasey in the Botanical, and Mr. Saunders in the Horticultural, the most enthusiastic "why don't you do it?" can ask no more.

SCRAPS AND QUERIES.

THE CHRISTMAS ROSE.—"Sub" says: If "Reader" will look in "Breck's Book of Flowers," or Mrs. Loudon's "Companion to the Flower Garden," he will find the "Helleborus niger" or "Christmas Rose" spoken of. This is probably the flower he has seen mentioned in different papers. This plant is cultivated in some parts of New England with success. Chambers' Cyclopaedia has an illustration of it under the article "Hellebore."

FRENCH NOTES.—A correspondent kindly says:—"Knowing the desire of the editor that the GARDENER'S MONTHLY should be strictly accurate, even to the 'dotting of an i, and the crossing of a t,' I make no apology for offering

the following corrections: "The proper orthography of some of the places mentioned in the French notes is Champs-Elysees, Bois de Boulogne, Parc de Monseaux. And allow me to say that Louis XVI and Marie Antoinette, were beheaded in the "Place de la Concorde," and not on the spot of the "Chapelle Expiatione." The latter is the spot where they were buried, and where their bodies laid for twenty-one years, until removed by Louis XVIII, in 1815, to the royal vault of St. Denis."

THE FIRST HORTICULTURAL MAGAZINE.—We have never seen a copy of the Magazine referred to by a correspondent in the following note: "Have you heard of the first Horticultural Magazine published in this county about 1831, by Mr. Dickshut, of Baltimore?"

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

PROCEEDINGS OF THE AMERICAN POMOLOGICAL SOCIETY.—We received the volume for 1877 just as we were going to press last month, and had room for only a brief note of Mr. Flagg, the late Secretary of the Society. On looking through it carefully, we are more than ever surprised at its value. Most of the material in this number is fresh, it not having been made up of matter that has previously been published in most papers, as has been the case in some of the former issues. Through Mr. Flagg's sickness, most of the labor of preparing this unusually fine volume has fallen on the volunteer shoulders of Mr. P. Barry, to whom so much of the good work has previously fallen, and Mr. R. Manning and President Wilder have had the revision of the proof sheets. They may all be well proud of their work, and the public at large owes them a debt of gratitude for their labor.

GERMANTOWN HORTICULTURAL SOCIETY.—J. Jay Smith.—Philadelphians and their papers sometimes verify the adage that prophets are not without honor save in their own country, and it is to contradict this adage that notice is here taken of the action of the Germantown Horticultural Society, at the April meeting. Mr. Charles Miller, in offering a resolution, said: "We have a gentleman connected with this Society who will feel honored by our appreciation of him, not

only as our first President and our earnest co-worker, but also as a widely and well-known Horticulturist and Patron of Gardening. But as he requires no eulogy from me, I offer the following: Resolved, That Mr. Jno. Jay Smith be hereby elected an Honorary Member of the Germantown Horticultural Society." The resolution, being seconded by Mr. Alexander Newett and others, was unanimously adopted.

FIFTIETH ANNIVERSARY OF THE PENNSYLVANIA HORTICULTURAL SOCIETY.—On the 21st of Dec., 1877, this Society celebrated its 50th birthday, as already stated in our columns. This is the report of the proceedings on the occasion, and contains in full the address of Mr. J. E. Mitchell, giving a history of the work of the Society during that time.

NEW YORK HORTICULTURAL SOCIETY.—W. J. Davidson, Recording Secretary. The Spring exhibit is June 19, 20, 21st. The Fall, Sept. 25, 26, 27th. The premiums are very liberal, the list varied, and competition free to all. The regular meeting, the first Tuesday in the month, are at the Society's rooms, 55 west 33rd Street, New York.

In offering its monthly Premiums, it makes them in duplicate. Nurserymen and Florists are not allowed to compete with "amateurs," by which we understand those who keep gardeners, as well as those who do their own gardening, to which last the term is generally restricted in Europe.

THE
GARDENER'S MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

Vol. XX.

JULY, 1878.

Number 235.

FLOWER GARDEN AND PLEASURE GROUND.

COMMUNICATIONS.

A LADY'S WHEELBARROW.

BY MRS. L.

I am anxious to bring to your attention a new, light wheelbarrow, patented by a mechanic of this place. He makes a small size for ladies' gardening, which is a great treasure. I have one which I use constantly, being my own gardener, and think other ladies may be glad to have the same. It is not a toy, but strong and also very light, and some are very prettily painted. Mine is simply the natural wood, oiled and varnished. I send the address where they are sold in New York, and feel sure if you see them, you will be glad to recommend them to your readers.

I desire to add my protest to that of many others against the sending of plants from insect-infested green-houses. It is too bad to have scale and mealy bug brought into one's collection of choice, clean plants.

[We know our correspondent very well, and respect her delicacy in not putting in the name of the party making the light wheelbarrow; for it is too common for writers, under the guise of "information," to smuggle in an advertisement, thereby doing an injustice to those advertisers who honestly and squarely pay for them in their proper columns. For that reason—and not from mere financial reasons—we never allow such smuggled goods to pass, when they happen to be of the same class as other people pay for. In the case of an entirely new and valuable

plant, fruit, invention or idea, distinct from all others already in the trade, and which we feel is of benefit to the public, we never ask editorially whether the parties in interest have "been to the counting-room," but give the discoverers all the benefit from their discoveries, and they can afterwards advertise their wares and prices or not, as they choose. So, in this instance, we have no hesitation in saying that the name the lady sends, is Pugsley & Chapman, New York city. The fact that so good a gardener as we know this lady to be, should recommend this barrow, is in some respects better than looking at it with our large editorial eyes.—Ed. G. M.]

HOW BEDDING PLANTS MAY BE
ARRANGED.

BY C. G. BJORKLUND, NATIONAL SOLDIERS'
HOME, HAMPTON, VA.

Regular Foliage Beds should properly be some distance from the walks, say 40 to 60 feet, and where convenient, be placed behind the carpet-beds for which they may serve as backgrounds, while they lose nothing in appearance thereby. The shape of these beds is not subject to much restriction, though circles, ovals or parallelograms are preferable.

Only one variety of foliage plant should be put in each bed as chief plant, and these two or three feet apart, with *Petunias*, *Verbenas*, *Alyssum* or such like plants between them as undergrowth, bordered by one or two ribbons. The following plants may be used for this purpose:

Aralia papyrifera, *Caladium esculentum*, *Polymnia grandis*, *Wigandia caracasana*, *Canna*

discolor, *C. Zebrina*, *C. musæfolia*, *C. Marechal Vaillant*, *Solanum robustum*, *S. Warsewiczii*, *S. purpurea*; another variety, *S. salicifolius*, I have often found attacked at the roots by grubs.

Sub-tropical Beds.—On the same principles, with such plants as *Grevillea robusta*, *Ficus elastica*, *Aralia Sieboldi*, *Rhus glabra laciniata*, *Acacia lophanta* and others. As the surface of these beds will be in view the whole season, we might use a more ornamental arrangement for undergrowth. The surface should be flat, by which it will appear as if the standards were planted on carpet beds, if we plant small circles of *Pyrethrum parthenifolium aureum* around the stems, and fill the rest of the space with *Alternanthera*. The circles of *Cerastium elegantissima*, and the spaces, *Tradescantia zebrina*; or, circles of *Alternanthera*, and the rest of the space to be filled with *Stellaria graminea aurea*. This remarkable species of chickweed, as well as a few other plants, I have not yet tried in this country, and have, indeed, not even seen it in any American catalogue. I have noted it down, supposing that such useful plants, not yet in our collection, will soon be brought thither by our active nurserymen and florists. Said plant may be inferior to *Pyrethrum* (of the same color) in ribbon borders, but superior in massing, especially if a shaded place can be procured.

Sub-tropical Plants Promiscuously.—Of beds of any size and shape, where may be used *Datura Knightii*, *Cycas revoluta*, *Dimorphanthus manschuricus*, *Eucalyptus globulus*, and *E. marginatus*, *Phormium tenax*, and *P. t. fol. var.*: *Dracenas*, *Yucca aloifolia variegata*, *Y. gloriosa*, *Cordylina Rumphii*, *Chamæropus humilis*, *Phoenix dactylifera*, *Coryphe australis*, *Ferdinanda emimens*, *Zeia Japonica fol. var.*, *Erythrina crista galli*, *Arancarias*, *Abutilons*, and *Acer Japonica* in varieties.

Specimens—Tree Ferns, Palms, etc., make an excellent impression when planted (plunged in the ground) as specimens or groves, or they may be made to represent undergrowth to large trees, where especially the ferns delight in the shade. The size and character of the plants on hand may somewhat rule the manner in which to place them. So, for instance, will a *Pandanus*, *Latania*, *Seaforthia*, or *Phoenix*, if four or five feet high, appear well as single specimens on the lawn at a bending and ten feet from the walk; while if seven or eight feet they are striking objects on some distance behind the flower-

beds; such as *Dicksonias*, *Lomarias*, and other ferns, by the edge of a brook. *Yuccas* and *Agaves* are in place at the foot of rocks; and ferns might be planted in natural or artificial tree-stumps with *Lysimachia numularia* or such like to droop down around the sides.

Arrangement of specimens, as well as almost every other variation, has been for some years much admired in the public parks of London, especially Battersea, Victoria and Hyde Park, where some of the carpet-bed designs originated. These parks are acknowledged by most travelers as taking the lead in Europe; but as we know everything there is not adaptable here; and to describe an arrangement of plants to prove equally successful all over this extensive country would be impossible.

It will be seen and understood that it has not been my object to go through the whole list of bedding plants considered good, but merely to show how those mentioned may be combined and arranged.

WHAT IS A GARDEN ?

BY RUS IN URBE.

We go up a high mountain, and here the grand view bursts upon us, storming the gates of our soul and letting the vast sight flood into it and saturate it. Now that we have quaffed the drink, we turn to such details as strike us most, and try to make them out fully; or we follow the course of a chain of hills, or of a river, or of the roads, letting our eyes walk along these threads as though with spider's feet. That is to say, from a moment of sublime feeling we have quickly turned into our natural channel of part curiosity and part the desire for smaller objects more digestible to our nature. The panorama has first elevated us a very brief while, then interested us a longer while, and now weary of the vastness, we turn and descend the mountain. By-and-by the foreground, which got lost more and more as we went up, comes to meet us. There, at the bend of the road, where it emerges from between the woods, we see, like unto a picture in a frame, the village that we are bound for; there is the church and the steeple, a load of hay going into a barn, ducks—yes, we can actually discern ducks on the village pond—boys and girls coming home from school—oh, how pleased we are! Once more we feel comfortable, enjoying the small measure of our human capacities; once more our human soul is played upon by human sights. The vast panoramic view of our

globe on the mountain top, how small a place has it taken up on our inner shelves! But this narrow picture and the likes of it, how they fill and how they feed our eyes and our mind!

So we may conclude that gratitude and sublimity on this, our parent planet, can be but rare moments, and that the true nourishment of our soul admits only objects of comparatively small dimensions, such as will develop feelings of goodness, of taste, of pleasure, of enjoyment, of comfort, running down the scale of our harp from the divine to the human.

Happy the man whose lot is cast in a spot with a pretty view, no larger than his eyes can digest—not so small as to dwarf the capacity of his eyes. His craving for the beautiful will be daily satisfied; the pitch of his soul will be strengthened and maintained, and the demon of meanness is less likely to find a hold on him there.

Unfortunately, the spots with pretty views are comparatively rare. We cannot, all of us, live in a rolling, undulating country, drained by numerous streams and brooks, pleasantly wooded. On the contrary we, most of us, live on spots, stale and flat, but profitable. Not to satisfy the angel in us do we settle on the interminable prairie, but to satisfy the inner and the outer animal; to make a living; to earn plenty of food and of warm clothing for self and family; and, these obtained, to get for self and family as much of mental food as circumstances will permit—and sometimes there is but scant measure of that article. In proportion, however, that the animal gets appeased, the angel—heaven be thanked—will strive to get the upper hand. And so the well-to-do man will try to improve the looks of his fruitful, but otherwise uninteresting home. He will seize on whatever little aid nature will lend him; he will plant trees on a bare hillock; will cut a vista through a cane-brake; clear symmetrically a piece in the woods, teach a wayward spring to run its fantastic ripple through his meadow; or, if he does nothing better, he will plant a living screen before his manure-heap. His eyes, the windows of his soul, demand it; to them he ministers. But what is the unfortunate individual to do, who has of God's own earth only as little as to "farm a pig" or to "swing a cat" in? or who is cramped up in a city lot in the city?

Nature will out. That unfortunate individual, unable to reproduce on his ground even the smallest features of nature, one fine Spring morning, standing in the full light of the glorious

sun on his small and bare patch, was overheard to say: "There is not the space for a landscape here, nor the elements for it, sufficient for the æsthetic wants of a field mouse. But there is enough of it to have with me a good many of the flowers of the moderate zone of this or any other country, with here and there a bush and here and there an evergreen."

This, patient reader, I believe was the origin of the garden, and this is the aim and end of a garden. In default of living in a delightful spot, where nature spreads her beauties, both in the landscape and in the vegetation, we try to make ourselves that landscape and that vegetation; or where landscape is impossible, at least to raise that vegetation as far as it can be coaxed into—a garden. How far man has succeeded may, perhaps, form the subject of another and a later paper.

THE CELASTRUS SCANDENS—BITTER SWEET A STAFF TREE.

BY GEN. W. H. NOBLE, BRIDGEPORT, MASS.

The name of Bitter-sweet of right belongs, solely, to the *Solanum dulcamara*. Some likeness of its red fruitage, to the fiery crop of the *Celastrus*, doubtless made our climber its namesake. But our Bitter-sweet will not now readily give up a name so long and lovingly borne.

The *Celastrus* is sometimes also called the Staff tree. This name comes from the fancy by many, in a case of that spiral twist by which the Bitter-sweet lifts itself up any handy sapling. But its wood is hardly staunch enough to help much as a staff.

Our Bitter-sweet is one of the loveliest of climbers. It is a blithesome plant, either in its woodland home or beside the threshold. Its summer color and shelter, and its blazing crown of wintry garlands, should be made a feature in all decorative planting; yet, either to home or grounds, it has won but a sparse and stingy welcome. Perhaps its lavish woodland fruitage, within easy reach of so many, has much to do with this neglect.

The trouble is, it is a native, and by nature largely planted along the forest borders and the hedge, and beside the rippling stream; it shares lovingly with the grape, the lift of low down trees. The children, coming home with the nuts rattled down by the early frosts, joyfully round their baskets with the Bitter-sweet's golden treasure. So, like many other lovely plants to be had for the digging, we too rarely welcome its cheer

and shelter to our door-step or our grounds. But were it just now found as with tinted wood and fruit, heralded as from some far-off flowery land, people would go wild after it, as they often have for things not half so lovely.

Nature has denied the Bitter-sweet the bloom and fragrance which are the ruling charm of so many of its fellow climbers. But she has made it their equal as a decorative plant, by the rich, green shelter of its leafy mantle and its sturdy stretch of vine. With naught else, it is fit to deck and shield alike, the humblest and the most ambitious home. Flowers and perfume are fleeting; but the rich foliage of the Bitter-sweet holds against the scorching sun a dense and spreading growth of brightest green, outlasting the breath and tinge of flowers.

But the signal glory of the plant, compassing the year, is the clusters of its berries. From the size and tinge of tiny grapes till the early frost strips the wrap of white and gold from its coral fruitage, the plant at every step puts on new and changeful features; each gain toward ripeness, brings to deft woman a dainty store for tasteful decoration.

First, following its modest bloom, come little globes of lively green. These soon swell and change their tint to a greenish-bronze. A little further toward the chilly nights of early frosts, slender gaps in those tawny globes reveal the white wrap, hiding the flashing glint of its ripening seeds. Those opening slowly, widening more and more, unmask the glorious store within, of a fiery fruitage. By and by, as the early frost thins and brightens its foliage to a tenderer tint, the Bitter-sweet bears to Autumn a blazing crown of clustering coral clasped in lips of gold.

This fruitage of our climber, plucked and stored at each stage of this advance, yields a wondrous harvest for adornment. For every place and posture becoming winter bouquets and unfading garlands, it furnishes unrivalled aptness and grace; and its little green clusters, laid by to dry, while they still hide and tightly clasp their treasure, or when first the fiery glint of gold and scarlet flash from their opening screen, or garnered after the frosts from its still unfallen and tender tinted leaves, uncovers its blazing store to the full sunlight, the Bitter-sweet, at each phase, offers no end of help to decorative taste. No outcome of the seasons in fruit, leaf, or blossom, so brightens the home, so helps out the dearth of flowers or faces the wintry gloom, with such blazing fireside tint and cheer.

Out doors, smiling above the threshold, it welcomes the lodgment of the drifting snow and peers gaily out from its chilly mantle. Through the ice storm's crystal sheath it sheds a hopeful glow. Down over the porch, a window cap drooping, it greets, with rival ray, the flash from the blazing hearth. Sheltered only a little from the thrash of the winter's wind, and its coral fruitage clings, defiant of the frost, and wears a joyousness all through its gloom and storm. Thus endowed, the Bitter-sweet brings to the home a bright companionship, and bridges with hope of coming Spring and flowers in the stretch of its garlands, along the wood and spray.

Within doors, amid the festivities of Christmas, the dawning year, in home or temple, or in public hall, those stored-up pluckings from along its way to ripeness, cheer all through the winter's gloom. They bring to the matron apt and blithesome succor in her graceful struggle to brighten and fitly deck, when bereft of the grace and perfume of summer flowers.

The Bitter-sweet, out of those stored-up cuttings from its growth and harvest, offers in itself every form and tint for a rich winter bouquet. But wreathed into evergreen festoons, tufted amongst them and other bright seed pods and berries, or with them and autumnal leaves, dried ferns, grasses, and the feathery seed whorls of the wild white Clematis, fringing and crowning the mirror, gaily bordering the paintings on the wall or grouped with them and living plants in vase or hanging basket, the Bitter-sweet beyond any bloom or growth of the year, helps in the welcome of the holidays, and keeps up brightness and cheer in the household, till the longed-for coming of the flowers, whose loveliness its brilliant treasures measurably replace our climber. So round's the year with its cheery presence, made brighter by the dainty placing of deft woman; that, if in the transmigration of souls, the human ever takes on the form and essentials of the plant, I pray for mine—its lodgment in a Bitter-sweet.

One of the loveliest lessons I have ever seen in Nature's handling of color and tasteful planting, was our climber, belting the wealth of its glowing harvest over a group of New England cedars. On a bright, dewy morning of early Autumn, beside a little rest in the climb of a hilly country road, I came upon a group of some half-dozen well-grown, thrifty, young cedars. They stood in easy distinctness around one of stouter form and taller spire. Every

wood earth with which the beds were liberally dressed. A wash of lime and sulphur will branch drooped with rich, full verdure, and a store of berries for the winter tarrying birds. Around this group thus arranged, circling from one to another, and up the central pinnacle, wound and festooned a vigorous Bitter-sweet. Its tender, frost-tinged foliage, sparse in such untutored soil, and a girt of blazing berries along every tendril, flashing from out its fringe, hung out distinct against the dark background of these cedars.

To emphasize this tasteful array of color, the frost-tinged crimson drapery of a climbing Sumach, threaded and girt a couple of the furthest Cedars, and stretched its gay streamers up that central spire. So perfect was the grace and coloring of this group that, to human eye, it seemed rather the living mosaic of some master taste than one of nature's careful rearing.

This woodland lesson tells to the heedful new uses for the Bitter-sweet and its like. What infinite variety might be tastefully wrought out of the kaleidoscope of bright colors or growing things? For example, imagine added to the pencilling of this group, the golden foliage of the Japanese Honeysuckle, delicately robing one of these cedars, and threading its tendrils among those crimson ribbons streaming up that central spire. Again, how would look in this mosaic, girt around the base of this cedar group, a fringe of scarlet, say in company with the bright tints on leaf or flower of other brilliant plants. These are but hints. The chances for like effects are as infinite as the varied tinge on leaf or flower, or as their unlike growths.

EDITORIAL NOTES.

RHODODENDRONS.—Our magnificent Spring weather has made gardening more than usually enjoyable, and there has been little openly expressed hankering after the Horticultural advantages of other lands. The writer of this could not resist the temptation to take a run of a few hours to look at his neighbor's little gardens recently, and he was particularly struck by the immense number of Rhododendrons every where planted, and which seem to be thriving so well, since their simple culture is so well understood, and which is simply deep, cool soil, the surface sufficiently elevated above the surrounding soil

to keep the little hair-like roots from ever being water-logged. The older planted Rhododendron beds are particularly charming. In the case of Mr. John Haines, the branch bent down with the weight of bloom, and actually had to be shored up in some instances as in an overloaded fruit tree. Mrs. Harry Ingersoll's are simply magnificent, some being nearly twenty feet high, and of an immense variety of color. The best clump of these were admirably assisted in the general effect by a very large and well-proportioned purple leaved Beech tree. Miss Fox, a neighbor of Mrs. Ingersoll, has some beds of charming varieties, but are only about twelve years set out. They are now about five to eight feet high, and form one broad sheet of bloom.

On our trip we learned that there may, in the future, be some little troubles, which it will be well for Rhododendron growers to look after, and guard against. In one, the trouble was from a very lively aphid, which keeps to the under sides of the leaves and gives the foliage a musty look on the under surface. It makes the plants unsightly, and is an injury, though not to a very serious extent.

A worse trouble comes from a borer, a species of *Buprestis*, which hollows the stems in the center. It does not enter at the ground, as does the Quince or Peach borer, but on the branches. It is more after the fashion of the common Currant borer in the kind of work it does. The Belgian Azaleas near were also attacked with it, but it may be a foreign insect introduced here, and may not spread to any great extent.

Another very serious trouble was found in a very interesting collection about twelve years old. The leaves had a withery look, and some, attacked last year, were quite dead. Examining the stems just beneath the ground, we found the coarse, wooly threads of a fungus, eating its course around, in many cases completely girdling them. It is a very common fungus in woods, and many persons may have seen it on a piece of board on which a flower pot has stood. It is no new thing that this coarse, thready fungus, so generally on dead wood, will leave it and attack living stems. Mr. William Saunders called the writer's attention, some thirty years ago, to a case in a cold grapeery, where it had left an old board and eaten a way for itself around the stem of a huge Grape vine. But it is not often it does this. In this Rhododendron case, it evidently came from the half-decayed soil

probably help those that are not beyond recovery.

On the whole, we feel that even from our small Germantown point we may congratulate the friends of *Rhododendron* culture on their great success. It has been a reproach that we have to go

no more trouble in growing *Rhododendrons* here than cabbages.

WAHLENBERGIA TUBEROSA.—*Wahlenbergia* is a genus being closely allied to *Campanula*, and affords us many very beautiful hardy herbaceous plants. *W. grandiflora* is particularly well



WAHLENBERGIA TUBEROSA.

to England to see American plants. We thought it was a hard task to raise them; but since we find that all we need is a cool, airy soil, carefully avoiding wet soil, or even heavy soil, there is known in American gardens by its very large flowers and parsnip-like roots. While at the nurseries of Messrs. J. Veitch & Sons, of Chelsea, England, last year, the writer was particularly

interested in one with singular potato-like knobs on the surface of the ground, as well as a profusion of beautiful flowers. It is one of the loveliest things of its class that could possibly be. The following is a representation of it as growing at Messrs. Veitch, with a description taken from Sir Joseph D. Hooker's magazine for 1875 :

"In the whole genus, which is a tolerably uniform one in habit, I know of no feature so remarkable as the tuberous root stock of this, which resembles a cluster of potatoes placed on the top of the pot; the contrast of these grotesque objects with the exquisitely graceful thread-like stems and profusion of pearl-white rose-streaked blossoms is exceedingly striking, and recommends the plant as a desirable one for greenhouse, and probably for out-of-door culture. Care must be taken not to overwater the plant when not in flower, or the tubers will soon rot."

ALL ABOUT ROSES.—Under the name of *Journal des Roses*, a magazine exclusively devoted to the Queen of Flowers, has been started in France. We note that the editor agrees with us, and against the authority of the "books," that the true Eglantine is the Dog Rose, and not the Sweet Briar.

SCRAPS AND QUERIES.

LAWN GRASS.—W. B. LeV., Philadelphia, writes: "The enclosed sample of grass was grown from seed sold me for 'Kentucky Blue Grass,' and as it makes a beautiful lawn and displaces the 'Fall Grass,' I am anxious to have its proper name. Will you oblige me by giving me the same? Being in want of more seed this Spring, I called at several seed establishments, but they did not seem to know what it was. On consulting THE GARDENER'S MONTHLY, I found in March, 1876, an article on 'Rhode Island Bent Grass.' I then called on the seed stores again, but they discouraged me from buying the latter as it would not suit our climate, and that it would not make a good lawn. One firm said it was nothing but common Herd grass. I found none in this market; so I sent to W. E. Barret & Co., Providence, R. I.; and the result is at present writing, my lawn looks if it will exceed any in W. P. With thanks for your article on R. I. Bent."

[The little piece sent appears to be *Poa trivialis*,

and not either Blue Grass or Rhode Island Bent Grass and which we have seen occasionally, lately, in lawns about Philadelphia, and promising very well. But it is known that the Kentucky Blue Grass makes an admirable lawn grass for Philadelphia and vicinity, and nothing better is to be wished for; it, as well as the Rhode Island Bent, will crowd out every weedy thing in time. Rhode Island Bent is Herd grass, or Red-top of some stores; but by no means the "common" Herd grass. Dr. Channing, in the article referred to by our correspondent, pointed out the difference. A small patch of the plants from seed sent by Dr. Channing, corroborates all Dr. C. says of the value of the Rhode Island variety as it may as well be called for a popular distinction sake. From the growth of this in our flower border, we see no reason why it may not make an excellent lawn grass here, as well as in Rhode Island. The only remark we can make on this matter seems to be that *Poa campestris*, the Kentucky Blue, or Pennsylvania Green grass, seems quite good enough for all our purposes.—ED. G. M.]

TRANSPLANTING HOLLIES.—C. A. D., New York, says: "Can you tell me the reason why the *Ilex opaca* is so difficult to transplant successfully? I have tried it repeatedly before, but I thought that in a large one having been repeatedly transplanted, there would be some good chance of success. Yet one I tried the past Spring, is either dead already or so near it that there is no hope of its resuscitation; while another one much smaller, given me by a friend and transplanted but a small distance comparatively, and had its roots exposed to the air scarcely at all, died before the frequently transplanted one, and, in fact, never gave any sign of intending to live. If you can give me light on this question, I shall be very much obliged to you."

[The Holly has very sluggish roots, while its evaporating powers through its leaves are enormous. To be successful with transplanting Hollies, we have to regulate these extremes, which we do by cutting off the leaves in cases of doubtful success. We have never known a case where the leaves and half-hardened wood were cut away, that perfect success did not follow. Many people hate to lose even for a short time the beautiful leaves; but it is only for a couple of months; and it is better to lose this two months of gratification than the whole tree.—ED. G. M.]

GREEN HOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

AMONG THE ORCHID CROWERS.

BY MR. W. FALCONER, CAMBRIDGE BOTANICAL GARDEN, CAMBRIDGE, MASS.

F. L. Ames, Esq., at North Easton, Mass., has a large and select collection of Orchids, including many fine specimens recently purchased at South Amboy and Albany, and also the extensive and rare collection he purchased about a year ago of J. S. Rand, Jr. Just now he has a finely flowered plant of *Phalenopsis grandiflora aurea*—a most excellent variety, with immense flowers; it is a recent purchase from Menand, at Albany.

Cypripedium Sedeni is still in flower. This is one of my greatest favorites, because it is always in blossom, and the flower-spikes are shorter than those of *Roezli* or the *Loweii* section, and they often fork off into two or more branches. Constitutionally it is robust and free growing, and one of its greatest merits is that we have not to "wait a lifetime" to see it bloom, as is the case with small plants of *hirsutissimum*, *Stonei* or *Loweii*.

At the Botanic Garden here, a specimen of *Zygopetalum Mackayi*, with sixteen flower-spikes, and five to eight, mostly six blooms, on a spike, is going out of bloom. *Lycaste Skinneri* is coming into bloom; one plant with two of this year's bulbs is showing seventeen flowers.

The *Calanthes* are fine; we had them in a cool house to prolong their beauty, but as I noticed a little spotting near the tops of some of the *Veitchii* bulbs, I immediately removed them all to the warmest house, where I keep them quite dry.

Lælia anceps is very fine. Two 14-inch pans of *Maxillaria picta* have several hundreds of blooms apiece. This is not a fine Orchid, but its profusion is extreme.

Cypripedium purpuratum is blooming freely; the flowers have a bold and erect bearing, and are of a white and rich brownish purple color. The foliage, too, is handsomely variegated. *Dendrobium chrysanthum*, a pendulous Indian species, with beautiful yellow flowers, has now wreaths of blossoms.

NOTES ON ORCHIDS.

BY E. HOLLY, HUDSON, N. Y.

Being engaged somewhat in growing greenhouse and bedding plants, and especially Orchids, I have been much interested in such articles as have appeared from time to time in the MONTHLY upon the culture of Orchids. The articles from Mr. Chas. H. Snow, of Baltimore, I think very practical. I like that kind of information very much, and hope Mr. Snow may continue his articles as often as he can get facts together for the benefit of Orchid growers; and I think the number is increasing very fast in this country. At a late sale of imported Orchids from Brazil or Venezuela, which were collected by Mr. Thomas Hogg, of New York, there was a large attendance and good prices were realized for most of the articles sold, which consisted largely of *Cattleya Mossiæ*. There was sold on the same day and place (Messrs. Young and Elliott), quite a collection from Guatemala, which were fine plants in fine condition and brought good prices. Mr. E. S. Rand is now in Brazil, up the river Amazon, where he has now a large collection of Orchids ready to ship when the proper time arrives. I suppose these will be sold in New York when they arrive, thus giving Orchids growers a chance to purchase and establish plants for themselves, which takes from one to two years before the plants are strong enough to blossom. Dry plants of Orchids not established, should be bought with considerable caution, as they will not all come boldly up to our wishes; and then there has been many sold which were not true to name. This is very annoying after getting the plant established and having them turn out much inferior to the varieties which they were purchased for. I hope to see new names writing up articles on Orchids and their culture for the MONTHLY.

DISEASE IN THE MARECHAL NIEL ROSE.

BY J. L. R., ST. JOSEPH, MO.

Having read with much interest the notes of your correspondents in regard to the disease (?), which has made its appearance on the Marechal Niel Rose of late, and having had personal

experience with it, will relate it and my remedy as a cure. We have a Marechal Niel worked on the Dog Rose. It is about four years old. It has grown finely and bloomed very well all along until last Fall, when we cut it back to throw blooms for Christmas. It attracted our attention by being very slow breaking; but we judged the cloudy weather as the cause of that. But at length it did break, and bloomed about five or six dozen blooms. Some of the blooms were medium good, others were not. After it finished blooming, our rose began to turn back, dropped its leaves, showed no inclination whatever to break. We concluded our rose must have the same disease (?) your correspondents described in the MONTHLY. We examined it and found it exactly so, namely, with a large shapeless excrescence just above the union, and also numerous very small ones at intervals along the stem, like warts. Our proprietor informed me that it was "going to die, and I might try any experiment I wished." I began work by cutting all the small excrescence off close, and about one-third of the large ones also. I then washed the wounds well with strong sulphur water, and rubbed sulphur well in the wounds, and wet some sulphur, adding water enough to make it stick; then gave all of the wounds a good coat of it, let it remain two weeks or so, when I found it began slightly to heal. I gave it another washing, and treated it the same as before, and let it remain for two weeks more, when it had healed nearly over. I made two more cuttings of the large excrescence, and treated it in the same way as described, and in course of time it healed completely over again. I found the excrescence inside to be of a very brittle nature, having rusted dead streaks through it. My rose did not make any headway for a while; but as time wore on it began to break, increasing more vigorously as the weather began to get fine, and now, May 5th, you could not wish to see a more healthy plant. It has "set" more than one hundred buds, and is continuing to bud.

I somewhat agree with W. W. as regards the cause of the disease, for it plainly illustrates his statement; whereas it prefers to break just *above* the union. In conclusion, I might say I have found the Marechal Niel more sensitive and impatient of any neglect than any rose I have met with, though when properly cared for it will amply repay any extra trouble the operator may have had.

FLORAL DECORATION OF THE TABLE.

BY "AUNT CARRIE."

The use of flowers for the table is, we are glad to know, exciting general attention among the more tasteful of our community; even though they be those residing in cottages and setting but simple tables.

What, indeed, has wealth or grandeur to do with this subject of flowers? Those sweet and refreshing, those silent messengers, which whisper to the weary, toil-worn, working man or woman, of peace and rest!

We say, therefore, to that large middle class, composing the majority of our American homes, never set a table without giving it that last dainty touch—a vase, basket, or stand of flowers, or if not flowers, the "bit of green," which imparts such a charming grace.

Now, during the Summer season, it is supposed that any lady may be able to secure her pretty ornament for each meal, by merely running into yard or garden, there to gather the treasures so dear to most women's hearts; the buds and flowers, feathery sprays and plumes of green which form the most effective of table adornment. In order to help those inexperienced in this class of floral arrangement, we will make a few suggestions that will perhaps aid in the work; which, once commenced, will so grow upon the taste, that the tasteful housewife will as readily relinquish the table meats and napkins as the more charming addition of flowers or greenery.

The variety of "stands," baskets, vases, &c., exhibited in our china and fancy-stores for this class of ornament is "legion," and one becomes confused in the very effort to select the *most* beautiful, where all are striking.

In this day, even the humble may array their tables tastefully, with glass and china; for though it may not be "cut" in the one instance, nor "Sevres" in the other, still very cheap; "fruit sets" of glass, if carefully polished, and simple white china, entire and quite pure in its color, will impart that air of refinement which even the costly articles fail to do, where rough-handed "Mary Anns" have charge of the dining room.

We advise, therefore, that whether of richest "cut-glass" or simple crystal of domestic manufacture, glass should form in a large measure the table adornment, especially the receptacles for flowers.

Pretty glass baskets, long trumpet-shaped

vases, and slender little specimen glasses, may be purchased for various sums, from twenty-five cents to as many dollars; and nothing can have (especially in Summer) a cooler or more satisfactory effect. The pretty Parian baskets—with open work or perforated walls, lined with amber, crimson, blue or green glass (which is strongly effective, gleaming through the creamy-white exterior), are equally charming and within the reach of all; as even in the “dollar stores” we have picked up a few designs faultlessly perfect in manufacture and artistic in design.

The March-stand, consisting of a lower tazza of size about two-thirds larger than an upper one, with which it is connected by a slender stem. The stands may be purchased in various sizes, but are easily imitated by a “home-made” affair, far less expensive.

In the upper tazza, it is our custom to place a slender trumpet-shaped vase, the taller and more slender, the prettier in our opinion. Again, by making such a stand of tin, neatly painted, then filling with damp sand, or even soil, we may possess a living ornament of surprising beauty. We had such an one made at trifling cost, consisting of a circular tin pan, eight inches in diameter, connected with an upper one, of five inches, by a rod twelve inches long, which has been a charming object all Winter. Filling the pans with damp sand, (kept constantly wet), we inserted in the lower pan cuttings of *Tradescantia aquatica*, several variegated Ivies with delightful foliage, and a root of Madeira vine; in the upper, the faithful old *Lysimachia*, and two little boxes well covered with *Linaria cymbalaria*, which have grown on and keep bubbling over the edges in billowy masses, beautiful to behold. Of course the stem is covered, and mosses make a close carpet on the surface. Now there is no sameness about this one stand of the season; for be it known, we insert cut flowers all through the surface, while in the top tazza or pan, we place various pretty arrangements, sometimes a tall trumpet of cut flowers, or a Parian vase of rose-buds; again, a little basket filled with moss and any treasure we can secure, or indeed (tell it not in Gath), very often a fine grown Sweet-Potato vine, which has elicited more praise than any other addition to our home-made stand.

We could go on and on, describing the varied means used in our own flower-loving families, for embellishing the table for each meal—“the girls” taking turns in this pleasant duty, of

which the little individual vases at each plate is considered the dearest, most enviable act of all; for, if by any means, the special rose-bud admired by the dear paterfamilias, the waxy-white Hyacinth always loved by “mother,” or the drooping bells of the young sister’s Lily of the Valley, can be forced to bloom, the Winter through, and gathered each day from the garden bed, then indeed are the successful florists happy beyond measure.

We would, in conclusion, ask our sister friends, are not such teachings worth much to the rising generation of 1878? I would suggest for you that perhaps Mr. R. of Columbus, O., alludes to “Floral Decorations for the Dwelling House, an English work by Annie Hassard,” published here by McMillan & Co., N. Y.

LUCULIA GRATISSIMA.

BY JAMES TAPLIN, SOUTH AMBOY, N. J.

I noticed a query as to this plant being in cultivation in this country. We had a plant of over one hundred fine heads of bloom last winter, and any of those heads of flowers would perfume a large greenhouse. This plant has been planted in the Camellia house for three years. There must be quite a number of plants in the country, for I have sold them to people from New York to San Francisco. It will always be a high priced plant, being difficult to propagate, and still more difficult to import from Europe. We imported it three times before we obtained it alive. The *Luculia* is not a good pot plant, but is of easy cultivation planted out in a cool greenhouse. It requires an abundance of water, both overhead and to the roots when growing, and to be kept free from insects, which are very fond of its large, succulent foliage.

CURE FOR MEALY BUG.

BY DR. WM. F. CHANNING, PROVIDENCE, R. I.

I found, two years ago, before the publication of the same fact by a correspondent of the MONTHLY, that a solution of White Hellebore and soap puts an end to the slug on Rose-bushes. My next experiment with the same solution was on certain house plants infected with scale—cousin-german of the mealy bug. One thorough application seemed to clear the plants of this pest, though a second application was needed two or three weeks after, to dispose of a new, sparse and soft-shelled generation. Any kind of

strong soap answers well in solution with White Hellebore. I have a partiality for good soft-soap for such purposes, having found it as effective as whale-oil soap with house plants, and less disagreeable as well as cheaper.

The enquiries of a "Reader," last Autumn, for a cure for mealy bug, recalled my experience with the Hellebore solution in the case of scale; and I suggested to my friend, Mr. Wm. H. Hogg, florist, of this city, to try it upon a large *Stephanotis*, on a trellis in one of his houses, on which the mealy bug had been long established. The following experiment was devised and conducted entirely by Mr. Hogg, who permits me to report it: He made a ball of powdered White Hellebore and whale-oil soap, suited to the cavity of one of Wheeler's screw-globes, attachable to a hydrant or force-pump, for the purpose of distributing insecticide liquids or manures. The action of the water flowing around the ball, inside of the globe, is to dissolve the ball gradually, and distribute the solution of Hellebore and soap through the hose without further trouble. In Mr. Hogg's house the globe and hose were connected with the city water-pipes, and commanded all the pressure needed or desirable. The *Stephanotis* was washed with the hose at first daily. After a week, or say six applications, the mealy bug had very much diminished, and, with occasional washings, the plant and house have been for several weeks apparently free of the pest, except on closest examination, when some slight traces can still be found. Practically, the success has been perfect, and the cost in trouble and labor small. Mr. Hogg also bears testimony to the complete effectiveness of this application with the hose to plants infested with scale. I think gardeners will recognize the importance of this experiment. White Hellebore must now be considered as the most powerful insecticide known, which is not also a planticide.

EUCHARIS AMAZONICA.

BY RODERICK CAMPBELL, UTICA, N. Y.

I pot all the plants at one time, that is in a compost of turfy loam and sand, well mixed together; let the compost lie at least two months before using, in a dry place, and at the time of potting I place through the compost pieces of cow-dung, well dried, as large as walnuts, using pots according to the size of plants wanted, well drained; the draining must be complete or failure follows. After all is potted, which I do

about the middle or latter part of May, I place the plants in a small house; close all ventilators. I admit no air but only once a week to let the foul air escape. Here I keep the plants saturated with water until the 15th of September, when I partially withhold water until the end of the month, when I remove all the plants to a cool, airy place, so that the leaves in some shape or other assume a yellowish cast; but the plants must not be allowed to shrivel. About the middle of November I take one or two or more, as according to what stock I may have, and introduce them into heat, and do so at an interval of six to ten weeks. This is all that I know of the *Eucharis* to make it flower the entire year. I do not pot my plants every year; I allow them now four to six years in the same pot, if the drainage is good.

ASPECT OF A GREENHOUSE.

BY FLETCHER WILLIAMS, WAYNE CO., N. Y.

Many are deterred from the enjoyment of a greenhouse or conservatory in connection with the dwelling house, under the idea that certain Southerly exposures are necessary. I would say to the contrary, that from experience, I have learned to regard the difference in exposure as of no practical consequence, at least not sufficient to prevent the erection of the house where most convenient. The element of success is rather in a house constructed properly, to enable the plants to be near the glass. And for the *Camellia*, the *Erica* and the *Rose* tribes, and for many other of our most desirable plants, I would consider a Northern exposure as desirable. In this case, however, more care may be necessary in providing shelter from Winter winds. Double glazing on the exposed part is an effective and not expensive method.

CURE FOR CRACKING IN PEARS.

BY MISS C. E. BREWSTER.

About cracking in Pears, several times I have known of its being radically cured by burying old rusty iron about the roots, or watering plentifully with copperas water. In fact, I have never known either to fail; though the cracking of Pears mentioned by your correspondents may be occasioned by some cause which cannot be removed by "Iron in the Soil."

EDITORIAL NOTES.

BEAUTIFUL CHINA ASTERS.—The *Garden* has a colored plate of beautiful Asters. How won-

derfully they have been improved. One of these flowers measures four and a half inches across. The Aster is an excellent plant for one to exercise skill in plant-growing on.

THE AMARYLLIS.—The London papers tell us the taste for the Amaryllis is becoming quite general in England. The writer of this, when in England last Summer, saw a large house at Mr. B. S. Williams' wholly devoted to these bulbs, showing a large demand for them. In our own country we fancy the taste will also increase. The admirable sketches of Miss G. in our pages, show how much there is in them to admire, and how easy it is to manage them. The writer of this has, every Summer, beautiful blossoms of *A. longifolia* in the open ground, with no more trouble than the taking up of the root in the Fall and putting it "anywhere," and then setting it out in the Spring. At this writing, May 25th, it is throwing up an unusually long flower stalk.

THE CHINESE PRIMROSE.—Everybody knows and admires the Chinese Primrose, but few know how beautiful it may be until they see the chromo issued by the *Gardener's Chronicle* of May 4th. The flower stem is a quarter of an inch thick, and the head, on which 16 flowers are seen, is six inches across. Each flower is one inch and three-quarters wide, of a rich crimson purple, and with a bright golden star in the center.

NEW OR RARE PLANTS.

BEGONIA FRÆBELII.—This is a newly discovered and recently introduced (three years ago) species, a native of the Republic of Ecuador, and named in compliment to Fræbel of Zurich, who first grew and distributed it. It is a tuberous-rooted species, nearly allied to *Begonia cinnabarina*, and one of the easiest to grow and most gorgeous of the genus. Its leaves are radical, large, thick, uniformly green and pubescent, and in well grown plants envelop the flower-pots like the leaves of thrifty *Cinerarias*. The blossoms vary in color from rose to the most intense and vivid scarlet and glowing carmine, and are produced on long stems clear above the leaves.

The finest specimens of this lovely *Begonia* I have seen or heard of, I saw recently at Mr. Such's Nurseries, South Amboy, N. J. The plants were growing in seven-inch pots, on a

bench near the glass in an "intermediate" house, and had some leaves that I found on measurement to be 15 by 13 inches wide, and flowers from 2 to 3½ inches across. Mr. Taplin, the manager, tells me that they grow well in the coolest greenhouse, and again they do not object to a little heat, providing they have a light and airy position. They grow most luxuriantly, and bloom most profusely in autumn and winter, after which they rest for a period. F.

ABUTILON GEO. A. STANLEY.—A double Abutilon is a great novelty. We have Double Hollyhocks, Double Altheas, Double Chinese Hibiscus, all of the Malvaceous family, but one Double Abutilon that we know of under the above name. A Cleveland correspondent sends us a colored photograph of one which has retained the semi-double character for several years. The color, a rosy crimson, and is in itself a novelty.

SCRAPS AND QUERIES.

DOUBLE GERANIUM ETHEL BEALE.—As most gardeners know, the best of the Double Geraniums have a ragged and confused set of petals. In English works, Ethel Beale is introduced to us as one for the first time presenting a regularly elegant form. The following is the description given:

One of the most beautiful and distinct Double Geraniums in cultivation, with clusters of brilliant-colored flowers, resembling the finest Double Balsam in perfection of outline. The petals are evenly and perfectly reflexed, and the immense trusses of bloom present a most unique and charming appearance.

The color of the flowers is rich pink, shading off to brilliant crimson, reflex of petals silvery-white, and the perfectly developed form of the flowers, combined with its remarkably free habit, makes it a most valuable acquisition as an exhibition plant, or for cut blooms. It is undoubtedly far before any other of its class, and we recommend it with the utmost confidence to all Geranium growers. It is particularly well adapted for market work.

Mrs. E. B. H., Michigan City, Ind., says:—"Can thee give any information as to the best method of cleaning plants of lice (green). I am very much troubled with them upon my pot plants and those in the garden beds as well."

[In most cases syringing with soapy water is the

best way of getting rid of Aphides. There are washes of various kinds, but a powerful syringe is generally equal to the work, and little preparation is required for its use. See the article of Dr. Channing in this month's issue. It has relation to scale and mealy bug chiefly, but may be useful against other insects.—ED. G. M.]

SPAN OR LEAN-TO GREENHOUSE.—C. H. S., Newmarket, Ontario, Canada, says:—"Being compelled by the narrowness of my lot, which runs east and west, to build my greenhouse ending the same way, I would be thankful to you for information as to whether there would be any advantage in building a span-roofed house over a lean-to?"

[So much depends on what one wants to grow, and the circumstances attending management, that it is difficult to say, independently of these considerations, whether one should have a span-roofed house, or one on the lean-to principle. So far as we can understand our correspondent's

wants, there seems to be no objection whatever to a lean-to house under his circumstances.—ED. G. M.]

GARDENIA FLOWER.—J. L. R., St. Joseph, Mo., writes:—"With this mail I forward the bloom of a plant for identification. You will see I have been dissecting it. I would send you a perfect bloom if I could procure it. The leaves are rather thick and leathery. The bark bears a strong resemblance to the common Alder, having a verucose appearance; the plant bloomed finely, and is just through. If it were not for my short attention to Botany and thinking myself incompetent, I would class it in the Madder family."

[We give this letter entire, as an encouragement to young Botanists to persevere with their structural investigations, for this young man has come near the mark in placing it in the Rubiaceæ or madder family, the relics of the flower he sends, showing it to belong to one of the large-flowered tropical Gardenia's.—ED. G. M.]

FRUIT AND VEGETABLE GARDENING.

COMMUNICATIONS.

DWARF JUNE BERRY.

BY T. T. FINNEY, NASHVILLE, OHIO.

With your permission I send a few items concerning the Dwarf June Berry, of which inquiry was made in March number. I have grown the Dwarf June Berry many years, and prize it highly, as I believe does every one who is the fortunate possessor of one or more bushes. It is not very extensively disseminated here as yet, owing to the fact that no one has ever propagated it for sale. The first stock of plants was brought from Maryland many years since, and has attracted marked attention wherever grown, not only by its dwarf habit, but by its immense productiveness. With me its productiveness has been a matter of wonder and surprise, "literally covered" seeming to be a term especially suited to a description of its prolific character. In size, the berries approach, when fully ripe, nearly that of the Early Purple Cherry. Its large size may be due, however, to the fact that mine are growing on land freshly cleared of timber. Here its season of ripening lasts several

days, furnishing a supply of fruit of several days' duration. It is of neat habit when properly cared for, and may be grown as a small tree with a single stem, or it may be grown in clumps or stools. It has thus far been entirely free from insects and disease. As it does not evince any tendency to overspread all creation by throwing up suckers, it is admissible in the smallest garden.

The only defect it has (and it is not the fault of the fruit) is the inordinate fondness that birds have for the fruit. Strawberries, Raspberries and Cherries are all forsaken by these feathered pilferers as soon as the June Berries begin to ripen. Where birds are destructive to the early small fruits, the June Berry might be grown specially for the birds, as they seem to prefer it to anything else; and a small area would furnish pasture sweet for a great many robins, catbirds and redheads.

DWARF JUNE BERRY AGAIN.

BY H. C. VAN DEMAN, GENEVA, KANSAS.

I am glad this valuable fruit has been brought to the notice of your readers. I think with Mr.

Terry, of Iowa, that it is very far from being a humbug. I have this Spring set out several hundred more plants to grow for the fruit. Although there is no doubt of this being an *Amelanchier*, I cannot find any species in the books that exactly coincides with this one. The stock from which my plants came was brought to Kansas from Illinois about ten years ago, and so far as I am able to ascertain, the plants there were grown from seeds obtained in Pennsylvania. The old-fashioned tree Service Berry, or June Berry, nearly every one knows, as it grows all over the Eastern and Middle States, and most of the Western States, too. If this dwarf species grows wild in Pennsylvania or Virginia, I hope some of our friends there will tell us. I have two sub-species growing on my place. The one mentioned grows about three feet high here, but in Illinois it grew to six feet. The other kind is like the first, except that it grows only half as high. Both kinds bear prodigiously. The flavor is mild, rich, sub-acid, and is very good eaten raw or in any way that Raspberries may be used. In size almost as large as the Houghton Gooseberry. Mixed with the Gooseberry, a very nice sauce is made without the use of sugar. The nurserymen here are just waking up to the importance of disseminating the plants. Many of them do not know there is such a thing. By experiment, I have found that it will grow budded or grafted in the apple, and no doubt it will grow in other stocks of the *Rosaceæ* family. I do not know that this would be any benefit, as it propagates easily and does well on its own roots. I have heard rather indirectly that the smaller variety that I have was found in one of the extreme southern counties of this State, and that it grows abundantly there along the bluffs. Culture greatly improves this fruit, and I hope that it may be more generally grown. It certainly is here a great acquisition to the small fruits.

A NEW STOCK FOR THE PEAR.

BY W. C. STRONG, BRIGHTON, MASS.

Having a group of *Pyrus japonica* seedlings which I noticed to be unusually fruitful, some five or six years ago, I have kept the stock since that time, for the purpose of raising seedlings for hedge plants. The habit and vigor of growth of these plants suggested the idea of using them as stocks for budding with the Pear. I reasoned as follows:—This *P. japonica* is quite as nearly allied to the common Pear as is

the Quince; indeed, it is rather classed as *Pyrus* than *Cydonia*. It is a more hardy variety than the Quince, being never injured in root or branch by the winter. It is vigorous and adapts itself to a great variety of soil, and is in this respect quite in contrast with the Quince stock. Lastly, it will be likely to dwarf the Pear, and induce fruitfulness quite as much as does the Quince. Reasoning thus, I made trial upon a few stocks during the last summer, which were planted with no reference to this purpose. The result was that the buds "took" with great readiness, and we now have young pears with luxuriant growth upon this stock. My partner and I are so well pleased with the appearance and promise of this stock that we have planted out our whole crop of last year's seedlings, about 15,000, for the purpose of budding, this August. We find the habit of growth of the seedlings to be clean and upright, quite the contrast with the plants usually propagated by root cuttings. The average height of the plants in the seed bed the first season was a foot and a half, although many attained to a height of nearly three feet, and would have taken a bud, the first year, from seed. Possibly this particular variety and its descendants may be more vigorous than the common type. However this may be, it is clear that such seedlings will "work" well. To my mind the prospect is decidedly encouraging that a new and valuable stock for dwarfing the Pear is here promised. But I am fully aware that the experiment is not yet tested to a conclusion. Yet it can be but a question of a comparatively short time before definite results will be obtained.

HYBRID STRAWBERRIES.

BY T. B. MINER, LINDEN, N. J.

Have we any hybrid strawberries? Several propagators of new varieties of this fruit say "yes," and claim to have produced them. Now, let us look a little into this subject. When we plant different varieties near each other, we find that there is no mixing in the *fruit* in the least degree, even if a hundred kinds were growing on a bed ten feet square. Suppose, then, that the seeds of the fruit grow on such a bed he sows, what will the plants be produced from this bed? Horticulturists would call them either "chance seedlings," or "chance *hybrids*," while in fact they are only chance *crosses*, the term "hybrid" being in such a case entirely improper. This cross is effected by insects carrying the

pollen from the blossoms of one variety to those of another, till perhaps each of the blossoms of the entire hundred varieties would become fructified, in some degree, by the pollen of every variety in the bed.

Next, we will suppose that a thousand of these so-called chance hybrids are growing, will any of them be exactly like the one hundred parent plants? Not one, but all will be different in some respect; and the entire lot will be one thousand *new varieties*, the nature of which can never be changed by the art of man.

Again, we set a variety by itself, say a staminate that is self-fructifying; no other variety within a mile, if you please; no possible cross, in this case, and we sow the seed of this isolated plant and produce another thousand *new varieties*, with not one exactly like the purer sort nor any other known to exist. How do these plants correspond in *their fruits* with the one thousand varieties first spoken of above? The fruit is about the same in size, color and quality, some small, some large, some good and some poor, and so far as *appearances* go, they seem to be as good in all respects as the first-named thousand varieties, not following the parent plant as regards *size of berries*, unless it be by mere chance.

Now we will come to what is *said* to produce the real hybrids. We take a choice staminate and also a good pistillate plant, and set them by themselves, about a foot apart, with no other varieties so near that there will be any danger that the pistillate variety can become, in any degree, fructified by any sort, but by the selected male staminate set by it; and when this *pistillate* plant fruits, we plant the seeds from it, and the result is claimed to be perfect hybrids with the good qualities of both parent sorts. Are they so? I say no—only chance seedlings, like the two thousand varieties previously introduced. Let any one take the largest two varieties, male and female, that exist in the world, say each producing berries twelve inches in circumference, as it is now claimed that one or two do produce, and let them be set one, five, or ten miles from every other variety, would the seed of the female plant produce plants that would bear berries as large as those of the parent plants? Only by chance; and in one thousand such plants perhaps not one would produce berries over *half the size* of those yielded by the parent varieties. If this is "hybridization," so be it. I shall call it simply chance crossing.

[It may be proper to note that Mr. Miner uses

the term "staminate" in the sense of *hermaphrodite*. No pure staminate are grown now. What he says of crossing is correct. A hybrid is a mixture of two distinct species. A cross is a mixture of distinct forms of one species, but, practically, the distinction is not of much importance, for botanists themselves disagree as to what is a species, and what is but a distinct form of one. Yet as the matter stands, if we could get progeny between an Alpine strawberry, called botanically, *Fragaria vesca*, and the common garden strawberries—*F. Virginiana*, they would be considered hybrids; but progeny between Hovey's Seedling and Albany Seedling, would be regarded as but a cross. But we are glad Mr. Miner has introduced the question. Instances are getting ridiculously common for people to talk of their new seedlings as hybrids or crosses between this and that, when there is no evidence whatever that they are more than natural variations.—ED. G. M.]

ANOTHER WORD ON RASPBERRIES.

BY G. WRIGHT, ROCK FALLS, ILL.

The question of the identity of Elm City and Highland Hardy is in a fair course of final settlement. Mr. Charles Downing sent me plants of H. Hardy to plant beside my Elm City, and I sent him the Elm City to test beside the H. Hardy, so have patience for a year or two. I presume the adaptation of soil to the different varieties has more to do with the success of Raspberry culture than most persons are aware. I have found that the Elm City will completely run out on dry land which is adapted to Philadelphia, while on low, moist ground Philadelphia will produce nothing, and Elm City is in its glory. We should not condemn a variety of fruit because of one failure. If any one succeeds with it, let us look for the element of success. I am certain the failure of H. Hardy, referred to by J. A. D., was due to dry soil or southern exposure.

CULTIVATING WHORTLEBERRIES.

BY L. S. BURBANK, WOBURN, MASS.

Several years ago I tried the experiment of transplanting some shrubs of the High Blueberry, *Vaccinium corymbosum*, into a rich and not very damp garden soil. The two specimens that I planted did so well that I have often thought of trying it as a hedge-plant for moist soils, selecting plants which produce the largest and best berries in abundance, and so securing a

hedge that will bear valuable fruit. It will undoubtedly make a good, thick hedge; but the slow growth, I thought, might be a great objection. I did not know that the experiment had ever been tried, till last week, I found in this town a row of the bushes, a hundred or more, that were taken up fifteen years ago and set out on the banks of the old canal. These bushes were very small when transplanted, but are now ten or twelve feet high, with trunks, some of them, I think, more than two inches in diameter. They stand in the track of the New Mystic Valley Railroad, and are all to be cut down immediately. I have spoken for some of the wood, and if you would like, will send you some of the largest samples, showing the rate of growth. They were set out by Mr. Josiah Curtis, of North Woburn, who still owns the land where they stand. I should like to see the experiment tried of raising from the seeds of the largest and best berries, a lot of these shrubs, to be used for a hedge in cold, moist lands. Why may not a larger and better berry than any of the wild varieties now produced be obtained in this way?

EDITORIAL NOTES.

THE FIRST GEORGIA PEACH.—They have a rivalry down South, as to who should have the first ripe peach. Samuel Rumph, of Marshallville, one of the Vice Presidents of the Georgia State Horticultural Society, secured the honor this year with the Early Amsden, on the 18th of May. That part of Georgia grows Peaches for Northern markets, enjoying a monopoly till the Maryland and Delaware orchards wake up to their work, which is about the end of July, so that the Georgia fruit-growers have a full six weeks to work.

GROWING GRAPES IN VINERIES.—Some years ago, some attention was given to growing Grapes on what is known as the extension system; that is, training a Grape vine so that in time one plant filled a whole house. In the hands of a good grower, we believe it is a much better plan than the single rod system. In hopes to recall attention to this good plan, we give the following from an Irish paper on the single vine in one large house at the Vice-Regal Lodge, Dublin:

"Taking it all in all, we are strongly of opinion that the great vine at the Vice-Regal Lodge, Phoenix Park, may fairly claim to be the finest example of a single vine grown on what is

called the extension system to be found in these islands, or, perhaps, outside of them. It is quite possible, and very probable, too, that there are other monster vines monopolizing entire houses, and covering a larger space; but we doubt if the Finchley or any other celebrity in its way presents such a picture of successful grape culture as does at this present moment the large vine at the Vice-Regal Lodge. The crop this year is, perhaps, the heaviest it has yet matured, certainly the size and weight of the bunches is beyond the average. Not a few of these would turn the scale between three and four pounds, and the weight of the general run of bunches will be fully two pounds each. The number of bunches which are strung along the lines of rod with almost mathematical precision is somewhere about five hundred, and every one of them fit for the exhibition table. The heaviest bunches are, as a matter of course, to be found at the extreme end of the house, opposite to that at which the vine is introduced, and from which rods are conducted horizontally the entire length of over seventy feet. The large-sized bunches illustrate the fact in grape-growing that size and sabbie are not at the same time attainable; to have the former you must forego the latter to some extent. Notably, too, the bunches which crowd the hip or back portion of the roof, which is less exposed to light and sunshine, have the color laid on more decidedly than those which are more fully exposed to these elements. Nothing can be more robust, clean, and healthy than the foliage. Altogether it is a triumph of cultural skill and good management, and the worthy and skilful *chef* who holds the horticultural helm at the Lodge may well be congratulated on the present aspect of his noble Black Hamburgh."

NEW OR RARE FRUITS AND VEGETABLES.

SWAYZIE POMME GRISE APPLE.—Of this excellent Apple Dr. Burnett says in a recent number of *The Canadian Horticulturist*:

"We are led in the same connection to speak of the Swayzie Pomme Grise, so named, we have been told, from Col. Swayzie, an inhabitant of the Niagara District. Beadle's *Canadian Gardener* expresses the opinion that the apple originated on this farm. The original tree was blown down, the author says, during the Summer of 1870, and was standing in an irregular clump

of apple trees, having the appearance of being the original seedling nursery, from which were raised the first apple trees planted out in orchard form on the farm. However this may be, we confidently affirm that this variety of apple is not as widely cultivated as it ought to be. To some tastes it is superior to its congener, the Pomme Grise. Certainly its flavor and delicacy go far to recommend it. It, too, might appropriately enough be called leather-skin, only it is of a lighter color than the Pomme Grise; sometimes with a blush on the cheek, and sometimes not, oftener with none. Both varieties are noble keepers, only fit for use in the Spring of the year. To those who have cultivated the varieties, and have plenty of them, it need not be said that they are as good for cooking as for dessert. Their dessert and cooking qualities are unexceptionable. The best mode, perhaps, to keep them is to store them in barrels, and only open when about to be used. Their long-keeping qualities commend them to dealers in fruit. We are not acquainted with any two other varieties more likely to give satisfaction to fruit-growers than these. The F. G. A. of Ontario did well to disseminate the Swayzie Pomme Grise. It will find its way wherever tried, and prove lasting comfort to the planter."

A BEAUTIFUL TURNIP.—In the Paris market the writer of this saw a beautiful Yellow Turnip introduced to public notice, chiefly through the



efforts of Messrs. Vilmorn, Andrieux & Co., the distinguished seedsmen of that city, who kindly

gave us the accompanying drawing of it. It was called the "Yellow Mont Magny."

It appears to have been raised by some market gardener near Paris. The skin is of a pretty smooth and clear yellow at the base of the turnip, while the upper portion is of a violet-red. The flesh is of a clear yellow, and has the sweetness so characteristic of the yellow kinds, and which makes them grow so increasingly in public estimation. A very interesting feature in it is, the remarkably small knot of leaves at the top—a feature which the cook generally appreciates in a good turnip. As Messrs. Vilmorn have numerous correspondents among our seed-houses, it is quite likely to be in the trade for Fall sowing.

THE CRESCENT SEEDLING STRAWBERRY.—We have accounts of this berry from New Jersey this year, and on the testimony of some uninterested friends whom we have engaged to examine the plants in bearing, we have no hesitation in giving it the award of very great superiority. Of so many new things of which we hear, few last over a year or two, before we find there is nothing in them. We believe this promises better than any we have heard of for a good while.

SCRAPS AND QUERIES.

DISEASED PEACH LEAF.—R., St. Joseph, Mo., says: "I send the leaves of some Peach trees that are entirely out of shape. I notice it on several trees in this section of the country. Please tell us what is the cause of this, and the preventative or cure. We had a very early Spring, which brought everything out very quick; then comes that snapping frost the first of May. I have attributed this as the cause, but of course will wait for your opinion, which will be of much importance to your readers of the MONTHLY in this section of the country."

[The leaves are affected by a fungus, similar to that which induces the ordinary Peach blister. This form we have not seen before. Instead of the irregular blotches, as generally seen, the leaf is apparently drawn downwards, folding the surface in regular plaits like the slats of a venetian blind. Send specimens to Prof. Farlow, at Cambridge, Mass., or W. H. Seaman, Department of Agriculture, Washington, D. C., who pay especial attention to the Peach fungi.—ED. G. M.]

PROFITABLE CHERRIES.—L., Pittsburg, Pa., writes: "I am thinking of setting out two hundred cherry trees for profit this Fall; what variety would you recommend me to use?"

[The only answer we can give, would be to note the kinds that sell best in the market intended for them. As a general rule, the Early Richmond is a very profitable cherry; but if the people you propose to sell to want eating cherries, there will be little sale for these. Very few persons succeed at fruit-growing by

going into it in a blind way. It generally grows by degrees, and in fact the market is seen, or the grower has some distinct idea of where and what will be wanted before he plants. Judging from your inquiry, you will not make out much with your venture, and in kindness would suggest that you plant only twenty instead of two hundred the first year, and in the meantime look around and see what kinds are in demand in the places where you think you may sell, after you get the crop ready.—Ed. G. M.]

FORESTRY.

COMMUNICATIONS.

YELLOW AND BLACK LOCUST.

BY H. F. HILLENMEYER, LEXINGTON, KY.

In answer to your query with reference to Yellow and Black Locust, I would state that there are two varieties. The Yellow Locust is erect in growth, has very thin sap-wood, is very durable, and of smooth cleavage. A gate-post, set to my knowledge in 1801, is as sound to-day as a "trade dollar."

Black Locust is irregular in growth, nearly as much so as Catalpa, is rough in cleavage, has darker wood, and is not so durable as the Yellow variety, and has thick sap wood even when mature.

Yellow Locust is harder and more durable, but not so tough as the Black variety. The difference does not arise from soil or situation, as both grow in the same groves here. I shall at an early day send you sections of wood from each, and in the meantime try to determine other specific differences.

EDITORIAL NOTES.

TEA PLANTS AT WASHINGTON.—The *Fruitist and Florist* says: Tea-plant bushes may be seen at the Agricultural Grounds also, which survive the winter almost like privet. We saw bushels of the tea-seed or nut there, grown and ripened in Georgia and South Carolina, a fact to be remembered. Mr. Wm. Saunders, the Superintendent, has full faith in tea growing in the southern portions of this country.

EXPENSE OF PREPARING TEA.—It has been objected that the Tea-plant, though proved to do well in the climate of our Southern States,

could not be prepared for a profit in this country, in competition with cheap Chinese labor. It is well known that the *Canothus Americanus* was extensively prepared as "Pennsylvania tea" a few years ago, and it is this which is referred to by the following correspondence of the *Philadelphia Press*:

"I noticed in a late issue of *The Press* an article relating to the culture of Chinese tea in America, and the only obstacle to a full competition would be the high price of labor in this country. You observed that Yankee ingenuity would soon obviate the necessity of hand labor in its manufacture. This is true, as the following narrative will demonstrate. A company was formed in this part of the State to manufacture tea from an indigenous plant growing spontaneously in our mountains. I was employed, with others, in its manufacture by hand at first, and subsequently by machinery. I am acquainted with every department of its manufacture, from the plucking of the leaves till prepared for the tea-pot. By hand, it will cost about twenty-five cents per pound; by machinery, such as we used, it can be manufactured ready for market at about ten or twelve cents per pound. This includes the gathering of the leaves and all other expenses. There were expended, I suppose, some \$20,000 in different machines before a successful one was obtained. It met every requirement, from the steaming of the green leaves till they were given that bloom and spiral shape so noticeable in foreign teas. I write this letter that you may still urge its culture in America and bring to the notice of individuals that there is no barrier to successful competition with any foreign nations.

MCELHATTAN, PA.

W. M. Q."

CHERRY TIMBER.—The *English Furniture Dealer* has this to say of Cherry timber: "The bark of the Cherry tree is so peculiar, as to render it distinguishable at first sight. The trunk is regularly shaped, but the bark is blackish and rough, and detaches itself semi-circularly, in thick narrow plates, which are renewed after a considerable lapse of time. The perfect wood of the American wild Cherry tree, is of a dull, light-red tint, which deepens with age. It is compact, fine-grained, and brilliant, and not liable to warp when perfectly seasoned. It is extensively employed for every species of furniture, and when chosen near the ramification of the trunk, it rivals Mahogany in beauty. Its wood is generally preferred to the Black Walnut, whose dun complexion with time becomes nearly black. Among trees that grow east of the Mississippi, it is the best substitute for Mahogany, and it is also useful for ship-building, and for the felloes of wheels.

"The Wild Orange tree, which is a species of Cherry tree, appears in North America to be nearly confined to the islands on the coast of the Carolinas, of Georgia, and of the Floridas. Except the margin of the sea, it is rarely found on the main land, even at the distance of eight or ten miles from the shore where the temperature is five or six degrees colder in Winter, and proportionately milder in the Summer. The wood is rose-colored, and very fine grained, but, as this species is not extensively multiplied, it does not appear to be appropriated to any use, as other wood, in no respect inferior, can readily be obtained. The Red Cherry tree is common only in the Northern States, and in Canada. Its size places it among trees of the third order. It rarely exceeds, and often does not equal 25 or 30 feet in height, and 6 or 8 inches in diameter. The trunk is covered with a smooth brown bark, which detaches itself laterally; the wood is fine-grained, and of a reddish hue; but the inferior size of the tree forbids its use in the mechanical arts. This species of Cherry tree offers the same remarkable peculiarity as the Canoe Birch, of producing itself spontaneously in cleared grounds, and in such parts of the forest as have been burnt."

TIMBER IN CALIFORNIA.—The *Rural Press* tells us that so far as the tree question is concerned, there is no cause for alarm; the State is gaining more trees every year than it loses. The destruction of old trees is rapid in Mendocino, Humboldt, Santa Cruz, Western Sonoma,

and the shores of Lake Tahoe, but the young trees are growing up, and the forests are in no danger of decreasing in area, unless in Santa Cruz, and we believe not there; while in the valleys the planting of fruit, timber, and ornamental trees is making gratifying progress. The irrigation ditches and reclamation dykes are extending every year, and trees will go with them; and we expect that in fifty years the economy of water will have made such advances that the Sacramento, San Joaquin and Salinas valleys will be as thickly settled with dwellings embowered among trees as are Napa, Sonoma, and Petaluma now, and the changes made for the better there within the last quarter of a century are little short of the marvelous.

YELLOW AND BLACK LOCUST. Recently a correspondent inquired whether there was any difference between these two, and a correspondent we have gives further information. It is singular that lumbermen often find differences, though botanists fail to see distinctions. We are often told of yellow and white Poplar among the Liriodendrons, but botanists see no differences. Something similar exists among some English timber trees. At a recent meeting of the Royal Horticultural Society Dr. Hogg showed a very interesting series of varieties of Hornbeam, Birch and Hazel, known to the woodmen of Sussex, but apparently overlooked by botanists. The color of the bark was different, the habit also, while for practical purposes the distinctions were even more important as variation in the degree of brittleness, toughness, &c., accompany the differences in color. The specimens exhibited were white and red Hazel, white and red Birch, white and red Hornbeam. The Hornbeam is called in the Weald of Sussex the Beech, and the red variety the Husbeech. The true Beech (*Fagus*) is distinguished as the "Timber Beech." The laborers never use the red Hornbeam or Husbeech for withes because of its brittleness. Dr. Hogg also showed twigs of Willow with galls produced by a species of *cecidiomyia*.

THE EUCALYPTUS.—Some time since a Connecticut correspondent wrote to us about his prospects in planting in Connecticut, coolly asking us to "send him a copy of our magazine containing our reply." We answered his communication in the magazine, but did not "send the copy." We suppose that the gentleman did not profit by our advice, for we hear that some one is arranging to plant it there extensively the coming Spring. We should hardly believe this, only we

happen to know of a tree dealer who is anxiously looking up plants in all directions for a customer in that State.

REPORT UPON FORESTRY—By Franklin B. Hough. From Hon. W. G. Le Duc, Commissioner of Agriculture. In 1877 Congress ordered the Commissioner of Agriculture to "appoint some man of approved attainments, and practically well acquainted with the methods of statistical inquiry with a view of ascertaining the annual amount of consumption, importation and exportation of timber and other forest products, the probable supply for future wants, the means best adapted to the preservation and the renewal of forests; the influence of forests upon climate, and the measures that have been successfully employed in various countries for the preservation and restoration or planting of forests, and report." Dr. Hough was appointed, and this is the report of his first year's work.

In many quarters regret has been expressed that some one was not appointed for this work who had an acquaintance with forest trees, and with the practical details of forest culture; but the act of Congress called for simply one acquainted with the methods of statistical inquiry, and Dr. Hough is fully as competent for this work as any one who could be selected. In this report he has industriously collected together an amount of material comprised in over 600 pages of what numbers have said of the Forestry question. With much of it every one interested in the subject is already acquainted. Emerson's report on the trees and shrubs of Mass.; Curtis woody plants of North Carolina; the writings of Becqueral, Marsh, and other well-known authors are liberally drawn on. Newspaper paragraphs, extracts from public meetings and discussions, and an immense amount of items, good, bad and indifferent, have been gathered together from home and foreign sources; and, which is especially of great value to us, have been indexed and given to us here in a shape that is readily accessible. Granting that a Commissioner charged with a more original line of investigation would have been more valuable, still the work as it is is well worth all the money it has cost, and we hope the subject will still be continued by the Department. As the field to be covered is simply the collecting of all sorts of paragraphs and copying from all sorts of works, it would be well to suggest that the statistician confine himself to this and not hazard guesses as to the botany of his timber trees. For instance, he tells us that

the "Red Pine" of which the Mormon tabernacle is built, is "understood to be the *Pinus contorta*," and worse yet, that the "White Pine" of Utah, is "*Abies Engelmannii* (?)" If we cannot have a Forest Commissioner who is acquainted with American Forest and timber trees, it will at least be well that he avoid such blunders as these by letting the text he collects alone. It is best to let the timber go as Utah Red Pine and Utah White Pine, than to propagate such fearful errors as these.

Aside from the value of the collection of opinions and facts here presented, the "measures" recommended are fairly estimated, we think, by General Le Duc in his presentation of the report to the House of Representatives: "While the information Dr. Hough has acquired has been extensive and in some cases exhaustive, —and while from the European worlds much may be learned—the differences that exist between our own country and foreign countries in the ownership of lands, make it impracticable to apply for the present, if ever, the systems of administration that prevails elsewhere."

This has always been our view; and yet we see Dr. Hough "is to make a personal inspection of European Forests," for which \$6,000 is requested. We really believe that \$6,000 spent by one acquainted with our own Forest products, among our own Forest trees, amongst our own Forest tree cultivators, and by one practically acquainted with Forestry work, and who has a knowledge of the principles of our Government and what it ought and could and what it should not do, would be infinitely more profitable to us; still we are not the less thankful to the Government and Dr. Hough for what they have given us. The whole proceeding is a step in the right direction. We have not got what we want—but we have the worth of all it has cost.

SCRAPS AND QUERIES.

UTILIZING THE PINE TREE.—T. C., 3221 Chestnut St., Phila., says:—"Can you tell me through the GARDENER'S MONTHLY, whether you have notice of any work on the special culture and mode of utilizing the Pine tree?"

[We do not know of any special work on this subject.—ED. G. M.]

THE AGRICULTURAL GROUNDS.—The Arboretum, at the Agricultural Grounds at Washington, just now is very interesting, the many hundreds of trees and shrubs being in nearly full foliage. Farmers who wish to identify or find a

name for any new or curious tree or shrub, which they happen to find on their farms, can do so by a walk in the Arboretum. Those designing to ornament their lanes and grounds can here see

every sort known in this zone; and artists who wish to delineate any particular foliage can here find every specimen.—*Fruit and Floral Magazine*.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

JUMPING BEANS OF MEXICO.

BY PROF. C. V. RILEY.

Mr. Riley exhibited certain seeds which possessed a hidden power of jumping and moving about on the table. He stated that he had recently received them from Mr. G. W. Barnes, of San Diego, Cal., and that they were generally known by the name of Mexican Jumping Seeds. They are probably derived from a tricoecous euphorbiaceous plant. Each of the seeds measures about one-third of an inch, and have two flat sides, meeting at an obtuse angle, and a third broader, convex side, with a medial carina. If cut open, each is found to contain a single fat, whitish worm, which has eaten all the contents of the seed and lined the shell with a delicate carpet of silk. The worm very closely resembles the common Apple Worm (*Carpocapsa pomonella*), and, indeed, is very closely related, the insect being known to science as *Carpocapsa saltilans*. It was first recorded by Westwood in the Proceedings of the Ashmolean Society of Oxford, in 1857 (t. 3, pp. 137-8), and repeatedly referred to under the name of *Carpocapsa Dehaisiana* in the Annales of the French Entomological Society for 1859. The egg of the moth is doubtless laid on the young pod which contains the three angular seeds, and the worm gnaws into the succulent seed, which, in after growth, closes up the minute hole of entrance, just as in the case of the common Pea Weevil (*Bruchus pisi*). Toward the month of February the larva eats a circular hole through the hard shell of its habitation, and then closes it again with a little plug of silk so admirably adjusted that the future moth, which will have no jaws to cut with, may escape from its prison. A slight cocoon is then spun within the seed, with a passage-way leading to the circular door; and the hitherto restless larva assumes the quiescent pupa state. Shortly afterwards, the pupa works to the door, pushes it open, and the little moth escapes. When ripe, the shell is very light, and, as the worm occupies but about one-sixth the enclosed space, the

slightest motion will cause the seed to rock from one of the flat sides to the other. But the seed is often made to jerk and jump, and, though this has been denied by many authors, Mr. Riley had had abundant proof of the fact, and had seen the seed jerked several lines forward at a bound, and raised a line or more from the surface on which it rested. If the seed be cut, the worm will soon cover up the hole with a transparent membrane of silk; and if two of the opposite angles be cut, the movements of the worm can then be seen, if the seed be held against the light. It then becomes evident that the jerking motion is conveyed by the worm holding fast to the silken lining by its anal and four hind abdominal prolegs, which have very strong hooks, and then drawing back the forebody, and tapping the wall of its cell with the head, sometimes thrown from side to side, but more often brought directly down as in the motion of a wood-pecker's head when tapping for insects. In drawing back the forebody the thoracic part swells, and the horny thoracic legs are withdrawn so as to assist the jaws in receiving the shock of the tap, which is very vigorous, and often given at the rate of two a second, and for twenty or more times without interruption. It is remarkable that this, of all the numerous seed-inhabiting Lepidopterous larvæ, should possess so curious a habit. The seed will move for several months, because, as with most Tortricidous larvæ, this one remains a long time in the larva state after coming to its growth and before pupating.

Mr. Barnes gives the following account of the plant, received through Capt. Polhamus, of Yuma, A. T. It seems to be called both *Yerba de flecha* and *Colliguaja* by the Mexicans:

"Arrow-weed (*Yerba de flecha*).—This is the name the shrub bears that produces the triangular seeds that during six or eight months have a continual jumping movement. The shrub is small, from four to six feet in height, branchy, and in the months of June and July yields the seeds, a pod containing three to five seeds. These seeds have each a little worm inside. The leaf of the plant is very similar to that of

the 'Garambullo,' the only difference being in the size, this being a little larger. It is half an inch in length and a quarter of an inch in width, a little more or less. The bark of the shrub is ash-colored, and the leaf is perfectly green during all the seasons. By merely stirring coffee, or any drink, with a small branch of it, it acts as an active cathartic. Taken in large doses it is an active poison, speedily causing death unless counteracted by an antidote."

Mr. Riley stated that the seed of *Tamariscus* was known to be moved by a Coleopterous larva (*Nanodes tamarisci*) that fed within it; and he concluded by describing and exhibiting a still more wonderful jumping property in a seed-like body which may be observed in our own woods. It is a little spherical seed-like gall produced in large numbers on the underside of the Post and other oaks of the White Oak group. This gall drops in large quantities to the ground, and the insect within can make it bound twenty times its own length, the ground under an infested tree being sometimes fairly alive with the mysterious moving bodies. The noise made often resembles the pattering of rain. The motion is imparted by the insect in the pupa and not in the larva state. He presented the following description of the gall, which may be known by the name of *Quercus saltatorious*, the black fly which issues from it having been described as *Cynips saltatorious* by Mr. H. Edwards, of San Francisco, addressed to the Academy of Sciences, St. Louis, Dec. 6th, 1877.

Gall of Cynips saltatorious.—Formed in summer on the underside of the leaves of *Quercus obtusiloba*, *Q. macrocarpa*, and *Q. alba*, often to the number of 1,000 on a single leaf: each gall inserted in a deep cavity which causes, on the upper surface, a bulging of a straw-yellow color, irregularly sub-conical, with the top flattened or concave, and with a minute central nipple, sometimes obsolete; the galls becoming detached and falling to the ground in autumn, leaving a pale, fulvous, circular disc at the bottom of the cavity. The gall has an average diameter of 1 mm., and the color and general appearance of a miniature acorn—the base being paler than the sides and conically produced to the central point of attachment. The apical portion is slightly constricted into a deep purple-brown rim, and the top within this rim is flat, with a small central nipple.

Received at different times from M. W. Harrington, of Ann Arbor, Mich.; from Irvin Arm-

strong, of Vevay, Ind.; from N. B. Baldwin, of Elgin, Ills., and from Wm. R. Howard, of Forsyth, Mo.; also sufficiently common in St. Louis county.

EDITORIAL NOTES.

THE PHILOSOPHY OF A FRUITFUL STRAWBERRY.—Every one knows that some strawberries bear more abundantly than others; but few could give any intelligent reason why. The leading reason is, the capacity of a plant to stool or make crowns. When a strawberry plant goes to rest in the Fall, it generally seems content with one good terminal eye; but some varieties will make half a dozen or more. These multiplied eyes seldom make good, strong stalks, throwing the fruit well up from the ground, but have generally a number of smaller ones.

The Crescent seems one of this class, as we judge by a plant sent us by Mr. Ezra Stokes. Mr. S. says it is a last year's plant. It had ten of these sub-crowns on it, and the first crop was in proportion. This is why it is such an abundant bearer. Of course, the reason why these crowns are so multiplied is another question; but we generally have to go down a good many steps to get to the bottom of the well in which truth lies. It is a gain when we have successfully made one.

GERANIUMS AND SNAKES.—We take the following from an exchange, but it would be worth while enquiring how far away the snakes are driven? We have certainly seen the garter snake within fifty feet of a Geranium bed:

"We lately read an account of a mining locality in Calaveras county being infested with snakes. In this connection we may observe that the report is that every species of snake may be permanently driven away from an infested place by planting Geraniums. In South Africa the Caffir people thus rid their premises of snakes. A missionary of South Africa had his parsonage surrounded by a narrow belt of Geraniums, which effectually protected the residence from any kind of snake. A few yards away from this Geranium belt a snake would occasionally be found. It is well known that the whole Geranium genus is highly redolent of volatile oils—lemon-scented, musk-scented, and peppermint-scented. What, therefore, is a very pleasant nose-gay for man is repugnant to the serpent tribe."

It is hardly safe to take newspaper reports for

pure science. How often, for instance, have we been told that the honey-bee in California never stores honey, and there have been no end to pretty theories "to account for the fact," built on this report; yet we find the following quiet paragraph in a recent California paper:

"Immense stores of honey were recently found in the fissures of the rocks in the mountain regions in California, by the workmen engaged in blasting a roadway for the Southern Pacific Railroad."

And we see by it that the story that bees do not stow away honey in California is all fudge.

SCRAPS AND QUERIES.

FRUITING OF WISTARIA SINENSIS.—This little matter seems to have created considerable interest. We are glad to have the following corroborative experiences that it is not till the vegetative forces have, in a measure, exhausted themselves, that the reproductive follows and fruit results. We have never known of a *Wistaria* fruiting while actively engaged in twining. Only when some branches find nothing to cling to, do they seem to think it time to think about seeding. Of course it makes no difference whether these branches hang from a horizontal iron rod or from a self-supporting stem. Branches flower when actively engaged in twining; that is, when these branches are supported, and it would be interesting to know from our correspondents if any have ever been known to seed, and if they have, whether or not some accidental circumstance, such as an injury to its bark, which interfered with the vegetative force produced it?

In the meantime, we are glad to have these confirmatory notes from our friends. The first is from Prof. Beal:

"Friend B. W. Steere: Thomas Meehan says that Chinese *Wistaria*, when supported, grows amazingly, but is seedless. On the contrary, the self-supporting so-called 'Tree *Wistarias* produce seeds abundantly, &c. What do you say? I remember collecting seeds from a vine on your house. Please write a sentence or two on this sheet anywhere, in pencil or otherwise, and return.

Agr'l Col.,

W. J. BEAL,
Lansing, Mich."

B. W. Steere is an old reliable nurseryman of Michigan.

"W. J. Beal, Est. Friend: Our *Wistaria*, which runs up a column of the verandah and along an iron rod, &c., in all 20 or 30 feet, has borne seed abundantly for many years; though my recollection now is, that it did not seed much, if any, for several years at first. Hence, I conclude that mature age has more to do with it than the manner of pruning or training. I have had no experience in training it tree-fashion but am unable to see why that course should cause it to seed more freely. If the question has any bearing on its propagation, I should say the less seed the better, as the pods are not ornamental, and it roots very easily from layers. Very truly, B. W. STEERE, Adrian, Mich."

The next is from Mr. W. C. Strong, of Brighton, Mass.:

"Your suggestion, as communicated to the *GARDENER'S MAGAZINE*, that the luxuriant vegetative growth of this vine when supported upon a trellis is the cause of its barrenness, is suggestive and worthy of consideration. It certainly seems reasonable to suppose that the self-supporting tree-form of training would check over-luxuriance of growth, and give free circulation of light and air, thus tending to fruitfulness. But I should like to inquire how extensive are the observations in regard to fruitfulness in different positions? I suppose we are agreed in the opinion that this vine, as ordinarily trained to porches and buildings, is profusely free-flowering, but rarely fruitful. Yet I know a vine in Newton, Mass., trained to a porch and luxuriant in growth, which gives an annual crop of about a peck of pods. Now, I would ask if instances of fruitfulness are numerous when trained in the tree-form? Not having observed such instances, I had concluded that we were to regard this as a peculiarity of certain seedlings. It is well-known that many seedlings set their fruit much more profusely than others, *e. g.*, the *Vicar Pear* much more than the *Duchesse d'Angouleme*. Those which are decidedly shy in setting fruit, although profuse in flowering, are rare exceptions, among which as conspicuous examples may be mentioned the *Wistaria sinensis* and the *Pyrus japonica*. And I have thought that this peculiarity tended to its own perpetuation. We are forced to propagate this peculiarity by layers and cuttings and roots. Seeds by which to obtain new and fruitful varieties are not to be found, and hence we multiply the individual variety by artificial methods and confirm all its

peculiarities. The Dix Pear will be shy in fruiting, however treated, until the end of time. But a seedling from it may rival the Buffum in productiveness. I now recall your inquiry made several years ago, Mr. Editor, where I obtained my *Pyrus japonica* seed. My reply is, that I have a seedling *Pyrus* which fruits abundantly, giving two or three bushels of fruit annually. Doubtless you and your readers have observed that some varieties of *Pyrus j.* are moderately fruitful, but I think this instance of regular fertility is marked, and not dependent upon position or mode of training. But we shall agree, of course, that position and training may greatly affect the vigor and productiveness of all fruits. My point is to recognize individual peculiarities, so far as they may be traced."

ENDURANCE OF SEEDS OF TENDER THINGS.

—Nothing is more interesting in botanical gardening than the fact that some plants, which will be destroyed by the first white frost, will resist extreme degrees of cold. T. D. R., Philadelphia, contributes the following in relation to this: This Spring the following plants came up from self-sown seed exposed all winter. I do not know whether this is unusual, but you cannot expect to get wheat without chaff: Castor Oil, Balloon Vine, Four O'clock."

ABNORMAL GROWTH OF A POTATO.—H. C. Y., 3502 Spring Garden street, Philadelphia, sends us an old Potato with a new one growing in the middle of it from "a number of similar instances in his cellar." Though rare, it is occasionally seen. The "sprout" of the potato has simply taken a turn in towards the center, instead of out and away as is usual. On cutting this open the thread connecting the young tuber with the outside was very well shown.

JAPAN WRAPPING, AROUND LILY BULBS.—T. S., Brooklyn, writes: "There was lately in New York a sale of imported Japan Lilies, such as *Auratum*, *Krameri*, &c. These bulbs on opening the cases were packed, not in sawdust as usual, but in a coating of what I took to be clay, cow-dung and a something which kept them as sound as if they had just been packed. In order to ascertain what that stuff really is, I send you with this some of it in a little tin box, and would be pleased if you could have it analyzed and tell your readers the parts of composition, and if you consider it good for shipping Lilies and such like bulbs. One of my Califor-

nia friends asks me how I thought he could pack best his *Lilium pardalinum*, and your answer to the above will not only oblige him, but many of your readers who ship or send bulbs for long distances. About Trilliums, he thinks it would be best to have them matured, and then ship them dry; while my theory is, to take the bulbs up when and where found, transplant them in the garden and ship them in Fall, when they show signs of fresh starting, say end of September. About *Rhododendron occidentalis*, he says: 'I now believe that every piece of the crown with a shoot or stem will grow, if shipped perfectly dry, in a dormant state, from November to February. A number of the shoots I put in the ground when I set out the R.'s here started leaf buds, but I find no roots on those I have examined as yet.' If you consider the answering of these questions of general interest, I would like you to mention them in your paper."

[We have taken pains to examine the coating carefully, and find it is nothing but manure of some herbivorous animals and clay, very finely worked up together; just the sort of stuff, in essence, as our forefathers used for grafting before wax compositions came into general use.—Ed. G. M.]

REMEDY FOR THE COLORADO POTATO BEETLE.—A Philadelphia correspondent writes: "The Potato bug has again begun its ravages. Cannot the Academy of Natural Sciences investigate its habits and devise some cheap and sure remedy? A soapy compound of crude petroleum might answer. A strong decoction of Tobacco stems has no effect—I have tried it. It is a very important matter, and well worthy of your notice."

[There is really nothing needed beyond Paris green. In the writer's own experience, it is mixed with very fine ashes, in the proportion of twenty to one. A Tomato-can with holes in the bottom like a grater, with the cover on the top and a long pole to keep it from the operator, is all the machine. An acre can be dusted in a few hours at a trifling expense. The writer's crop swarmed with the vermin as soon as the plants were above ground. The dose has been twice applied. At this writing (June 15th) it is impossible to see a more promising looking lot of plants. It is a poison, of course, but in careful hands there need be no more trouble with it than with gun-powder or lucifer matches.—Ed. G. M.]

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

SCRAPS FROM A BRAZILIAN JOURNAL.

BY E. S. RAND, JR.

It is difficult for one whose winters have always been spent in a northern clime to realize that these glorious, balmy days are December and January. In front of the large open veranda upon which I write, is a large orange tree loaded with ripening fruit and just bursting into blossom. Nearer, a huge Calabash tree, *Crescentea Cujete*, hangs full of the immense green fruit, showing most conclusively that though nature has placed the pumpkin on the ground, and the acorn on the tree, it was not from ignorance how to suspend the pumpkin. Plants that with us are purely greenhouse specimens, here grow into great bushes, and are covered with a wealth of flowers.

One of the surest ways of becoming familiar with the fruits of a country is to visit the markets. Here (in Para) the market opens at day-light; so immediately after coffee we walked to the lower market, a long, low, ambling structure, and not especially clean; but the display was most interesting. Although not the season of fruit, there was no lack, and great piles of oranges, baskets of limes, bananas, such as one never sees out of the tropics, and many other fruits left us in doubt which to try first.

The oranges are of medium size, generally dark colored or greenish, very sweet and very cheap; a few cents will buy a basketfull. To those who have tasted oranges fresh from the tree no words of description are necessary; to those who have not, no words will convey an idea. The banana probably suffers less from transportation than any other tropical fruit, but there is a delicate flavor to those ripened under a tropical sun which those we get in temperate zones never attain. There were many varieties, generally yellow, though the large red were not uncommon, and there were many of the long slender yellow, but the greater proportion were very small varieties, about as long as the middle finger, and deliciously sweet and melting. The limes, *Citrus limetta*, were small, round, bright yellow, and very fragrant; strange to say lemons are not grown; I have not seen one in Brazil; I was told that the climate was too hot, but can hardly believe it. Leaving the market we walked along the quay, shaded by a magnificent line of palms (*Oreodoxa regia*) and passed the

custom house, within a stone's throw of which we found large clumps of the showy orange milk-weed (*Asclepius curassavica*) which we grow in greenhouses. In a narrow ditch near at hand a light purple *Pontederia* was in full bloom, and some tall *Colocasias* had a showy, but ill-smelling white flowers. A few steps further there was plenty of a beautiful white *Pancratium* or more properly *Hymenocallis*, a tangle of light purple *Lantana*, and a wilderness of strong growing *Convolvulus* with a light purple flower. The tall *Assai* palms (*Euterpe caulis*) are very beautiful, and the strings of purple fruit very ornamental. This fruit, which we saw in great quantities in the market, is about the size of a marble; when ripe the purple pulp is rubbed off of the seed in water, is sweetened and drank as a beverage or taken with farina. In appearance it resembles elderberry tea; to most tastes it is not at first agreeable, but one soon learns to like it. Some tall fences were a mass of bright scarlet cypress vines (*Quamoclit coccinea*) the air was heavy with the fragrance of masses of jasmine (*Jasminum Sambac*). Castor oil beans (*Ricinus*) grew into trees and orange *Lantanas* formed huge bushes. * * *

We visited the old Botanic Garden, which has for years been neglected and allowed to grow to a mass of foliage. There were many large palms, but all Brazilian species; a hedge of the pink and white *Clerodendron* in full bloom and scenting the air; Cape Jasmines (*Gardenia*), and *Tabernæmontana coronaria*, large enough to sit under. A large pond was full of *Pontederia crassipes* in full bloom, the tall spikes of light purple flowers are very ornamental.

All through the garden and by the road sides, *Caladiums* in many varieties, with bright leaves, were weeds.

There were tall Papaw trees (*Carica citrifolia*) full of yellow fruit which is edible, but insipid. It is called by the Brazilians, "Mamma or Papa," as the plant is dioecious. There was also a tall tree of *Plumiera rubra* in abundant bloom. * * * *

On a second visit to the market we found a most meagre display of vegetables; tomatoes about the size of a large walnut, a few small turnips, cabbage leaves, for in the tropics cabbage does not head; onions, little bunches of Okra (*Abelmoschus esculentus*) and a profusion

of small bright, various colored, peppers. There were large bunches of Purslane which is used as a salad; but even this, with us, pestiferous weed, does not here grow with the luxuriance which so annoy us in our northern gardens.

There were large quantities of *Sesuvium portulacastrum* covered with purplish flowers, which seemed to be in great demand as a pot-herb. Of the squash family, which I expected to find well represented, there was only a small, crooked, rich squash, and a heap of little yellow pumpkins. There were musk and watermelons, but very poor, such as in Boston would not be thought fit to bring to market. They are very inferior in flavor, but are considered great delicacies.

Large baskets of shrimps, both alive and cooked, seemed to meet with ready sale; long strings of a small, dark colored turtle were waiting for the epicures of Para; negroes were buying very unpleasant looking fish; and in one stall a huge alligator was being cut into sections to suit customers.

The fruit market was most attractive; oranges, limes, and bananas, in any quantity; huge piles of Plantains (*Musa paradisiaca*) which, although palatable and often eaten raw, is far better cooked, and is prepared in many ways, all good; and bright fruits of various palms, including huge baskets of Assai.

Mangoes (*Mangifera Indica*) were seen at every stand, but they are not a popular fruit, having the reputation of causing fever, and a taste for them must be acquired, as the flavor of sweet resin or turpentine is not at first pleasant. The fruit of the cocoa (*Theobroma cacao*), the seeds of which form the cocoa of commerce, is seen in considerable quantities; it is orange colored, pentagonal, about nine inches long, and contains numerous seeds, bedded in a white pulp; from this pulp, mixed with water, an agreeable acid drink is prepared. Pineapples were delicious, the whole pulp melts away in the mouth, and one's only regret is that frequent indulgence in pineapples is not considered prudent. Little heaps of *Sapodilla*, *S. achras*, and of *S. mammosa*, more properly *Lucuma*, attracted my attention, but I was unable to discover an edible quality to warrant the reputation they have obtained; they seemed to my uneducated taste neither pleasant to the eye nor good for food; the seeds are shining brown, and very pretty. Of the Alligator Pea or "Avocado" (*Persea gratissima*) I can speak more favorably. The fruit is pear-shaped, about seven inches long

with a dark green or purple skin; the pulp is firm, buttery, and is eaten with sugar, spice, lime juice or pepper and salt. At first it is not unpleasant, and one soon becomes very fond of it. The Flower Market was poorly stocked; a few yellow chrysanthemums, some perpetual roses, bunches of jasmine, and some white pinks, composed the assortment. A white pink was offered me for twelve cents as very rare; the same money would have bought a peck measure of jasmine, or three dozen oranges.

I must leave for another letter a description of the gardens and orchards of Senor Serreira, the voyage up the Amazon, the trees, the climbers, the flowers which fairly bewilder me by their variety and beauty; the climate which is the perfected of climates, neither too warm nor too cold; the orchids of the Upper Amazon and the grand Victoria regia.

EDITORIAL NOTES.

EUROPEAN NOTES, BY THE EDITOR.—No. 11.—It is singular that with all the criticisms indulged in on Kings and Queens and Nobles, the world is largely indebted to them for very much of which it is proud; and this is especially true of the world in regard to some of the finest monuments that have been dedicated to flowers and gardening generally. The beautiful gardens I have given the reader a brief glimpse of—*Le Jardin des Plantes*—was in a great measure the idea of King Henry IV., who seems to have been a ruler who was actuated by a sincere desire to seek above all the happiness and welfare of his people. Moquet, a French traveler of that time, had brought a collection of foreign plants on his return, which were cultivated in the garden of the Louvre by the young lad who exhibited a strong taste for gardening, and at that early age he conceived the idea of drawing the French people nearer to friendship and brotherhood with foreign nations by the culture of foreign flowers. The idea developed and grew till these gardens were ultimately placed on a permanent foundation by Louis XIII.

Then there are the Royal Gardens at Kew; but suppose we now leave France and take a look at this famous establishment before bringing the reader back to American shores.

I had about written thus far when the morning's mail brings my usual bag full, and opening one of the book packages is a pretty volume in green and gold. "*Historia Filicum*, by John

Smith, ex-curator of the Royal Gardens, Kew;" and on the fly-leaf "Mr. Thomas Meehan, with the kind regards and remembrances of his old master, the Author." It brought to my mind more vividly than did my recent visit, the Kew of some thirty-five years ago. The pupils of that day are scattered, and many of them gone! Seeman's bones are in the swamps of Central America, and McIvor's among the hills of the East Indies; but the "old master" still lives, though probably much beyond his eightieth year. About twenty acres comprised all in that day. The kitchen garden was still walled in, and the pleasure grounds fenced off; still in a measure Royal private grounds. Sir William J. Hooker had but comparatively recently been appointed to the directorship, and my "old master" to the curatorship. Dr. Lindley had been strongly pressed for the directorship, but Sir William obtained the place. It was fortunate for the world that it was; for Botany and Horticulture all over the world has been moved by Kew; and I am quite sure that Kew owes more of its present famous magnificence to Sir William Hooker than the outside world has the least idea of. No one questions his devotion to science; but he knew that science, after all, has to be supported by the people, and he was willing that the people should have benefits at Kew as well as scientists. The Economic Museum grew out of this desire. Specimens of those vegetable products useful in the arts and sciences were arrayed for public inspection; florists' flowers, flower beds, and pleasant drives and walks were not forgotten; and, while science found all it expected, scientific instruction was so blended with floral pleasure that the people were not jealous. All were satisfied, and peer and peasant, the learned and the unlearned, were proud of the gardens, and only too glad to see them receive support. This is how matters stood when I was with my "old master." I was not surprised to find that Kew had grown; anything so wisely planned must grow; but I was surprised to find it now a giant, so to speak—400 acres!

Of all my haunts in the Old World, I was sure I should know Kew. In my mind I could see the little old tavern where the stage coach stopped, when a lad of 17, I was tipped out with his trunk in order to run a two years' course of study here. I was sure I should recognize the little old village houses in which my fellow students, keeping themselves on ten shillings a week, had to sleep in the garrets, and, as they used playfully

to say, to lie in their beds and study astronomy through the chinks in the tile-roofs. There was no doubt I could go to the exact spot where we used to gather the rare grass, *Cynodon dactylon*, and exchange our treasure for herbarium specimens with other botanists elsewhere. Above all, I should know the old Cactus House, to the care of which I was banished for many months for refusing, boy-like, to "peach on other fellows" who had broken the rules. But I could see nothing of any of these, and I could no more tell that I had ever known these gardens by anything I could see than if I had not been alive thirty-three years before. Prof. Thistleton Dyer and Mr. Nicholson kindly received me, and they had probably not then been born; and though Mr. John Smith was still curator, it was not the Mr. John Smith, my master, of the olden time. Mr. Smith, with a kindness I shall not soon forget, insisted in personally escorting me through the grounds, though the numerous calls on his attention leave him scarcely any time to properly perform duties which must be done. I fear he found me for some time a dull companion, for I am sure with old remembrances crowding on me, I never in all my journeyings felt so much like a stranger in a strange land. At last we came to the arboretum, and there at least were the old trees, old acquaintances, just as I had pictured them in my mind, and apparently just the same as they ever were. I suppose they must have grown some in all that time, but it did not seem so. I measured the Turkey Oak, 15 feet in girth, and the spread of its head was 90 feet; and the old Robinia—our Yellow Locust, was 12 feet 10 inches around; of course they could not have been so large when I first saw them.

Our American Oaks seem to do very well at Kew, and I fancy do most of our American trees. The largest *Liriodendrons* I have seen any where in England were here. It would be useless to attempt a detailed description of a huge place like this. There are houses for Palms, for Ferns, for Orchids, for Aquatics, for New Holland plants, for Succulents, and for innumerable other classes of plants, not all down in one bunch to save room and work, as in a commercial establishment, but with some view to landscape gardening effect. In this respect the great Palm House, of course, stands preeminent. I think it must be somewhere about 200 feet long by 70 feet wide, and there are galleries along which you can walk and

be in among the branches of the trees planted in the earth, and look down on the fronds of the Palms and Ferns below. One does not know how beautiful these things are till he has a chance to view in this manner on these full-grown things. There was a *Dicksonia antarctica*, an Australian tree Fern, whose nest-like fronds, I remember, had a diameter across the head of eighteen feet. "Why cannot we have houses like this in our country?" Ask the frost king. This huge pile only takes six boilers to heat it. I suppose, said I to Mr. Smith, "it must take a little fortune in coal to warm it." "Yes," he said, "we use 300 tons of coke." "Do you have it very cold in the Winter?" "Yes, the thermometer generally goes down to twenty, and sometimes to fifteen below freezing point." And we could have houses, too, if this were all. It would cost us as much in one year as it costs the Kew house in ten.

The young students are much better cared for than "when we were young." A laboratory is just finished, in which lectures by Baker, Hemsley, Brown, and others, on plant life are given, and every convenience for the young men to experiment in Botanical problems are afforded. There is a library of 300 volumes at their command; and besides all this, the wonderful abundance of living plants from all quarters of the globe.

Are the young men of the present time any better for all these facilities? I cannot say. Moore tells us of

"Love, all defying love, who sees
No gain in trophies won with ease."

And I am not sure but it is as true of love of one's profession as of the gentler passion. I can only say that Mr. Smith thinks they are immensely benefited, and that he sees an increasing desire on the part of the students to avail themselves of the increased advantages. It is wonderful how popular these gardens are with the people. The average attendance during the past year was 5000 a day. The heaviest visits are on Sundays and during the Summer months; these may be 18,000. As many as 25,000 have been there of a single Sunday afternoon. Notwithstanding these immense crowds, Mr. Smith says no serious damages have ever been done. Ten guards over these four hundred acres, keep in good order this huge mass of people.

But I feel that I am trespassing on the reader's good nature. Who wants to hear stories a year

old? I know there are a few partial friends who are pleased, but there are thousands from whom I do not hear, and who must naturally wish me to stop.

It is strange how we can travel in these days! I had barely passed out of range of the odor of the eglantine in the Old World, before, from the Capes of the Delaware, the sweet smell of the Indian corn was wafted over our good steamer; and I must confess it came as gratefully as incense to a heaven-thirsting soul. I never thought Indian corn so truly sweet, and yet the poems are all dedicated to the "Hawthorn's blossom!" There, on the 5th of June, in the "Pennsylvania," I lost sight of America, and here on the same spot, on the 30th of July, the "Ohio" had me back. I only ran across for a little rest. It was my desire to steal away and get back, and nobody be the wiser therefor but myself. But I had the misfortune to "get in the papers," and this and other work has been the consequence. However, if I have interested the reader, I shall be happy.

SELECT PLANTS ELIGIBLE FOR INDUSTRIAL CULTURE IN AUSTRALIA.—By Baron Ferd. Von Muller. There are few men who have worked so hard and so successfully as Baron Von Muller to make Botany practically useful to the Australians. The present work of near 300 pages is the fifth of a series contributed to, and published by, the Acclimation Society. It makes the people of the country at once acquainted with all that is known of the value of plants introduced into the colony. For instance, the following note on our Kentucky Coffee: "*Gymnocladus Canadensis*, Lamareck. The Chicot, a North American timber and avenue tree, attaining a height of eighty feet, allied to the *Gleditschia*, but, as its name implies, thornless. The wood is strong, tough, compact, fine-grained, and assumes a rosy color."

Australia should feel proud that it has so eminent a worker engaged in her interest as Baron Muller.

DR. CHARLES PICKERING—the naturalist of the Wilkes' exploring exhibition, and after whom *Pickeringia* was named, died at Boston on the 8th of March, aged 73 years. He was a cotemporary of Thomas Nuttall, and many of the facts given in the biography of Mr. Nuttall in our second volume, were contributed by him. He was a liberal-spirited man. The arrangement and indexing of the general Herbarium of the Academy of Natural Sciences of Philadelphia,

involving a great sacrifice of time and labor, was the sole work of Pickering and Dr. Bridges, who still lives.

JOHN FREED.—The many visitors to the great Centennial Exhibit will remember the superb collection of fruit, and among the several excellent commissioners in charge, Mr. John Freed. Of his earnest devotion to the interests of the exhibition, the present writer had excellent opportunity to know. No man's exhibit, small or large, was permitted to be overlooked by juries or the public if he could help it, and yet there was never the slightest effort to bias the judgment to be made on the exhibits. The Canadian papers bring to our notice the death of this good man in the sixty-fifth year of his age, and we can join in their view that Canadian Horticulture meets a severe loss in his death.

GARDENING LONGEVITY.—An old lady, the wife of a gardener, died in England recently, aged 105, and it is boasted that she had drank deeply of whiskey every day for twenty years previous. It is generally believed that only for the whiskey she might have lived to a much greater age. Here is the case of an Irish gardener, of whom nothing about whiskey is said, and so it is presumed he did not imbibe freely, who outlived the poor old lady: Mr. Thomas Johnson, gardener to Colonel Battersby, county Meath, for sixty years, died lately at the age of 106. He retained all his faculties to the last. Longevity in his case appears to have been hereditary, for his father, it is said, died at a still riper age, namely 115 years.

MR. J. H. McAFEE.—Formerly Professor of Horticulture in the Iowa Agricultural College, died at Columbus, Nevada, on the 17th of March, in his forty-fourth year. He was particularly identified with the progress of timber culture in our country.

SYNOPTICAL FLORA OF THE UNITED STATES.—Many years ago Torrey and his pupil, Asa Gray, commenced the *Flora of the United States*; but by the time the work had reached the Compositæ or Aster-like plants, the boundaries of the United States had so expanded that for this and other reasons, the work had to stop. Torrey is now no more; but Dr. Gray still active, though advanced in life, has continued the preparations for a great work, and which is now, we believe, nearly completed. A part of it is now issued, and the rest will soon follow. This part starts from where the old work of Torrey

and Gray left off, and is, therefore, the second part of volume first; an excellent idea under the circumstances, especially as Watson's Bibliography, noticed last month, gives all the references to what part first would cover.

It is to be hoped that Professor Gray will be spared yet many years to see the full completion of what will be a magnificent contribution to American Botany. It is advertised at six dollars, but we paid but five for our copy from Mr. John H. Redfield, of the Philadelphia Academy of Natural Sciences, who by purchasing a large quantity, has given his friends the benefit of what commission his work would be entitled to.

THE NATIVE FLOWERS AND FERNS OF THE UNITED STATES.—By Thomas Meehan. Illustrated by chromo-lithographs, by L. Prang & Co., Boston. The editor of this journal—the author of the above work, cannot, of course, say anything of its value—this he shall leave to his contemporaries; but he may be pardoned for saying why it was undertaken, and what he hopes to accomplish. It has always been the aim of his life to aid in spreading intelligence among the whole people. Twenty years ago, before the *GARDENER'S MONTHLY* was thought of, the existing Horticultural magazines appealed only to the wealthier classes. It was thought something might be done for Horticulture and general intelligence among a class that could not subscribe for higher-priced papers. Thus a magazine at *two-thirds or three-fourths less* in price than any then existing was projected, and the *GARDENER'S MONTHLY* was born. There was no intention of competing with any other magazine, but to work in a field wholly its own. Conscious of innumerable imperfections in his ability to manage it, he yet believes it has done some good—at any rate, all the good he ever hoped for it.

The same feeling induces the present attempt. Botanical works are abundant; but it seems to him there is yet room for a cheap work for the people. There are thousands who want to know something about wild flowers, who, when they are attracted by some wild waif of Flora, are interested in its history in all its relations to man, but who have not the time, money or opportunities to investigate the subject. Could not something cheap be prepared for these people? This work is the answer. Four colored plates and sixteen pages of letter-press for fifty cents. Can we do more? What our critical friends may have to say of the work we cannot,

of course, at this writing, tell. It is just possible some will show that if the work had been five dollars instead of fifty cents, much better plates or better work could have been given; that if the author had more intelligence it would have been better done; that if he had not blundered here or blundered there it would have been nearer perfection; that if the artist had only seen this or seen that he would have made a more accurate representation, or that the lithographer should have put more color here or less there in order to have done just the right thing.

Perhaps no one is more conscious of all this than the editor himself. Had he hesitated on these scores, as probably so many have before him, the work would never have been begun. It would have been much more to his taste if some gentleman of means, greater accomplishments, and more time to spare than he had, should have undertaken it. If some such a one so well fitted for the task could have been induced to take it up, the public would probably have had a much more complete work.

But as the fact was, no one else would undertake a people's work of this magnitude, so the present editor tried it. Imperfect as it may be, he yet hopes to improve as he progresses; and in the meantime he feels sure that he will have taken an intelligent pleasure into thousands of homes.

OUR NATIVE FLOWERS.—It is pleasant to see

so much attention being given to hardy herbaceous plants. We have before us a list wholly devoted to the native varieties, by Mr. E. Wheeler, of Boston, Mass. We believe the time will come when mere bedding plants will not be all that the flower garden comes to.

THE RURAL NEW YORKER.—We are glad to note by an increase of size in the *Rural New Yorker*, substantial signs of prosperity. The Agricultural Press of the country has severely suffered by the general depression of the last few years, and it is pleasant to note this first step in prosperity, especially as the *Rural New Yorker* deserves all the success it seems to gain.

THE AMERICAN AGRICULTURIST.—A few weeks ago we received a prospectus of "The Country Home," to be started by E. H. Libby and W. R. Beckwith, and we have now another, announcing that Mr. Libby will in future be the managing editor of the *American Agriculturist*, and Mr. Beckwith the Treasurer of the Orange Judd Company. Mr. Judd is still to be the President of the company. We understand from the circular that Dr. Thurber is to continue his relations with the paper, which all will be glad to hear. The *Agriculturist* has been of immense service to American Agriculture, and has never shown the slightest signs of decrepitude. It will be hard for the new managers to make it better than it has been, but we wish them every success in the endeavor.

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

CENTENNIAL EXHIBITION OF 1876.—The following is the report of Thomas Meehan, the Secretary of Group 36, giving, according to the rules of the Exhibition, a review of the progress of the century from the standpoint of a judge at the Exhibition, as just published by the Commission:

The Judges in the department of Pomology, in reviewing their work for the season, would observe that they were called on unexpectedly to fill the office, and had not the opportunity which the Judges of the other groups had of contemplating their work months in advance, and the advantages which time always gives for reflection on one's duties.

No provision had been made for Judges in

this department, and it was not till fruit had actually appeared on the tables at the Exhibition that the gentlemen who subsequently accepted the honor offered them were invited to serve. These were Messrs. W. L. Shaffer, A. W. Harrison and Thomas Meehan, of Philadelphia; Edwin Satterthwaite, of Jenkintown, Pennsylvania; Josiah Hoopes, of West Chester, Pennsylvania; and William Parry, of Cinnaminson, New Jersey. These gentlemen served continuously from the 25th of May till the close of the Exhibition; the perishable nature of the products requiring regular attendance. No one of them gave less than an average of one full day a week to the work; some gave two, and in the case of others two and three days a week on the average of the whole season were given. During one week they were reinforced by Mr.

Parker Earle, of Cobden, Illinois; Mr. Yellowley, of Canton, Mississippi; Mr. Suel Foster, of Muscatine, Iowa; and Mr. T. T. Lyon, of Michigan; the latter gentleman kindly remaining of his own free will another week at the work. On one occasion they had the benefit of the services of Mr. Thomas P. James, of Cambridge, Massachusetts, a leading officer of the American Pomological Society. In addition to fruits proper, they were asked to take oversight of field and garden vegetables; colored plates of fruits and vegetables; wax and other models of fruits and flowers; fruit trees; cereals, where they were the growth of the fall of 1876; and the leguminous products of many countries. In many of these classes only those exhibits were examined of which lists were handed in, or attention directed personally thereto by the Department of Awards; some other groups having felt justified in taking up portions of the exhibits; but in the classes of fruits and vegetables the Judges can say that there was no article placed on the regular Centennial tables, however small, but received their careful examination; and all the articles that were displayed in any other part of the grounds received the same attention, when in any way they received a knowledge of their existence. It is believed that nothing was overlooked. Over three thousand exhibits were examined and a large number noticed critically in the weekly reports; and of all these, two hundred and twenty-five had special points of excellence warranting recommendation for awards.

In reviewing the exhibits, the apple deserves the most distinguished consideration. Among the first exhibits of the season were apples which had been preserved through the winter to the end of May, in the fruit-house of N. Hellings & Bro., of Niles, Michigan; and of others preserved in ordinary cellars of the fruit-growers, sent to the Exhibition by the Michigan Pomological Society and the Iowa State Horticultural Society. These were in great variety, and testified admirably to the perfection to which the art of keeping fruits over the ordinary season has been brought. Scarcely had these excellent contributions been made before we were surprised by an exhibit of nearly one hundred varieties of Apples from the colony of Victoria, in Australia. Such an exhibit would have been impossible a hundred years ago, and for it steam must have the chief credit. But this alone would not have been sufficient without the knowledge of packing

and preserving apples which we have gained of late years. The Apple has proved itself to be better adapted to diverse climates and conditions than any other kind of fruit. We had fine exhibits from Owen's Sound in the North, to North Carolina in the South, and from most of the States north of the Potomac to Oregon. The Canadian apples, as a rule, are not as large as those from other sections of the continent, but are superior to most others in brilliancy of coloring, and often in delicacy of flavor. The apples of Oregon, on the other hand, surprise by their large dimensions. Usually fruit loses somewhat in flavor with an increase of size in these far Western States; but the Apples of Oregon are exceptions to this rule, if, indeed, such a rule may be considered of undoubted accuracy. Kansas and Nebraska raise remarkably large apples; so large and so clear of mildew and stains as to attract universal attention. The high color which marks the Apple in more northern latitudes is in a measure wanting in them. Iowa exhibited excellent fruit; not, perhaps, quite so large on the average as the two before-named States, but with an increase of color and flavor. Michigan Apples are not, on the whole, remarkable for extra size, but in beauty and excellent flavor equal any raised anywhere in the United States. As illustrating the excellent nature of the soil and climates for Apple-culture, very instructive exhibits were made by Maine, New Hampshire, Connecticut, Vermont, Massachusetts, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, Ohio, Indiana, Wisconsin, Illinois, as well as the States previously named. The magnificent display from North Carolina, from a single individual, Mr. Natt Atkinson, gave an excellent knowledge of the superiority of the mountain region of that State for apple-culture. The great progress we have made in early apples particularly was well illustrated in the first part of the apple season, by nearly two hundred named kinds from the orchard of Dr. John A. Warder, of Cincinnati, Ohio.

(To be Continued)

PENNSYLVANIA HORTICULTURAL SOCIETY.

Three years ago this Society inaugurated a system of giving a reception once a year in June, to the citizens of Philadelphia, and on the third annual one, just held, over five thousand persons were entertained, and all were delighted. The florists of Philadelphia added to the interest by admirable specimens of floral work, and the

wives and daughters of the leading members rivalled them by the charms of their tables. Some new fruits, Roses, and rare plants were also exhibited, but the chief pleasure was in the pleasant social intercourse.

It is quite evident, that, though Philadelphia has grown so as to occupy one hundred square miles of ground, and brick, and mortar, has banished the best old-time gardens to twenty miles and more from its center, where the grand hall is situated, Horticulture is still deeply rooted in the hearts of the Philadelphians, and there is room for its old-time glory if only the genius can be discovered to adapt the changed circumstances to this old and permanent love. Secretary Harrison is wonderfully successful in keeping up a full list of members; it is for those who are more practically interested in Horticulture to turn the advantages he holds together for them to Horticulture's practical account.

GEORGIA STATE HORTICULTURAL SOCIETY.—Proceedings at a second session held at Macon, August, 1876. This is entirely devoted to fruits, but gives a great deal of information about them, which we think was little known to anybody. The new society seems in a prosperous condition.

WESTERN NEW YORK HORTICULTURAL SOCIETY.—From ——. Secretary's name does not appear in the report; but whoever he may be, he has had an arduous task, and one very well performed from all appearance. Mr. P. Barry is President.

MARYLAND HORTICULTURAL SOCIETY.—The meeting of the 24th was well attended by the public, and well sustained by the exhibitors. A perpetual blooming Magnolia, *M. Semperflorens*, was exhibited by Mr. W. D. Brackenridge. The following are the names of the leading exhibitors: James Pentland, Archibald Brackenridge, John Feast, Cromwell & Congdon, Wm. Fraser, Andrew L. Black, Samuel Feast & Sons, N. F. Flitton, Robt. Patterson, Ernest Hoen, R. W. L. Rasin, Captain Snow, Wm. H. Perot, Robt. J. Halliday, August Hoen, Chas. Kemp, Jr., Mrs. A. H. Fields.

REPORT OF THE CONN. STATE BOARD OF AGRICULTURE for 1877.—The chief topics are the art of Plowing, Fertilizers and Forestry notes. The last topic is handled in an admirable manner. It is rare that we have seen so much of actual American experience recorded. There are plenty of theoretical studies derived from European works, but all too few notes from our own experiments.

FRUIT GROWERS' ASSOCIATION OF ONTARIO. Report for 1877.—Embellished with a colored plate of the Ontario apple, and illustrated by numerous insects beneficial and injurious to the fruit growers.

BELGIUM INTERNATIONAL HORTICULTURAL EXHIBITION.—Our Belgian contemporary, *L'Horticulture Belgique*, has given up the whole of its April number to the account of the great international Horticultural Exhibition, which appears to have been a great success. The vast Hall provided was unequal, and annexes had to be provided. In the history of the previous grand exhibitions, it refers to one in 1815 given in honor of the American Plenipotentiaries, James A. Bayard, John Q. Adams, Henry Clay and Albert Gallatin as particularly deserving of the name of the great Congress. The Rose Congress de Gand was so named in honor of that event. On the present occasion, the King and Queen of the Belgians, the Countess of Growers, the Count of Verdure of Dettterheim, and the Duke of Cazes in France, took a leading part in the honors of the occasion. A portrait of the latter nobleman is given in the same number. The late nurseries of Mr. Van Houtte seem to be now under the title of Van Houtte & Cuvelier, and were, of course, well represented. On the occasion of the leading English firms, Bull, Cutbush, A. Henderson, Jackman, Osborne, Rollison, Vietch, B. S. Williams and Wills were on the jury in the departments in which they had no personal interest, and Jennings, Moore, and Wynne of the English Horticultural Press, also took part. There were eight German jurors, twelve English, one Austrian, forty-three Belgian, thirty-two French, twelve from Holland, one Russian and one Swiss. The number of the jury shows the extent of the exposition. The account closes by saying that "the English exhibitors, Wills, Williams, Rollison, Veitch, and Bull, deserve especial mention." It proves that English Horticulture and Belgian Horticulture nourish for each other sentiments of great affection.

DUBUQUE, IOWA, has a Floral Association, and held a very successful exhibition, for the first time, in the last week in May. J. M. Griffith is President, and there are eight Vice-Presidents, but no Secretary.

WISCONSIN STATE HORTICULTURAL SOCIETY. Proceedings for 1877-1878. From F. W. Case, Secretary, Madison. This is full of essays of rather above the average in quality. Many of the best are by ladies.

THE
GARDENER'S MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

Vol. XX.

AUGUST, 1878.

Number 236.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

For a month or two in Spring, when all nature is gushing forth joyously into life, we are content to look on and enjoy the wondrous sights; and when in Fall the whole universe sparkles in autumnal tints, we gaze on the splendid pageant passing away without a selfish thought; but broiling, sweltering, roasting under our August sun, we feel that our garden art must do something more for us than show us beautiful sights like these. We must not forget this when we are thinking of laying out or improving our grounds. In fact landscape gardening has not quite the same idea to an American as it has to an European. In the old world it appeals to the eye and to the mind. It is an intellectual art. But our wants are more material; and the art must look after our creature comforts somewhat, as well as afford us pretty sights to see.

We have learned to protect ourselves from cold wintry winds, but the art of making a place cool in Summer is yet in its infancy. There is nothing accomplishes this better than plenty of grass and the neat deciduous tree foliage. The making of flower beds with box edgings and gravel walks suits Dutch and French gardening, but it is too hot for us.

The beds should be cut in grass. The walks round about a place should also be in grass as much as possible; only those likely to be frequently used should be gravel walks. Even these where tan can be obtained, are much cooler when this material can be used, than when grav-

elled. In the planting of roads, Art, as we read it in the books, plants only in corners, and makes its most striking effects to be seen from the drives; but American art as it should be, plants all the chief drives with deciduous shade trees, and yet allows you to look through beneath them to the beauties beyond.

Then again very much may be done by planting two or three trees together so that as they grow up, they will form natural seat backs. For this purpose there is nothing like the Oak tribe.

Sometimes we cannot get the coveted shade because we have planted slow growing trees—generally the prettiest and well worth waiting for,—this may be affected by planting liberally of Alders, Poplars, and similar ephemeral trees, to be cut away as they gradually interfere with the permanent kinds. The planting season will soon come around, and now is the time to look about and select the desirable kinds, and to decide on the proper place to set them.

The latter end of August is one of the best seasons of the year to transplant evergreens. The young growth of the past season has got pretty well hardened, so as to permit of but very little evaporation,—and the earth being warm, new roots push with great rapidity, and the tree becomes established in the ground before cold autumn winds begin. The chief difficulty is that the soil is usually very dry, which prevents much speed with the operation; and the weather being usually very warm, the trees have to be set again in the ground almost as fast as they are taken up; so that it is not safe to bring

them from a distance. It is as well therefore, to make all ready in anticipation of a rain, when no time may be lost in having the work pushed through. Should a spell of dry weather ensue,—which in September and October is very likely,—one good watering should be given, sufficient to soak well through the soil and well about the roots. A basin should be made to keep the water from running away from the spot, and to assist its soaking in. After being well watered, the loose soil, should be drawn in lightly over the watered soil, which will then aid in preventing the water from drying out soon again.

As soon in the fall as bulbs can be obtained they should be planted—though this will not generally be the case till October,—but it is as well to bear in mind that the earlier they are planted, the finer they will flower.

Towards the end of the month, and in September, evergreen hedges should receive their last pruning till next summer. Last spring, and in the summer, when a strong growth required it, the hedge has been severely pruned towards the apex of the cone-like form in which it has been trained, and the base has been suffered to grow any way it pleases. Now that, in turn, has come under the shears, so far as to get it into regular shape and form. It will not be forgotten that, to be very successful with evergreen hedges, they ought to have a growth at the base of at least four feet in diameter.

COMMUNICATIONS.

BLUNDERS AND MULCHING.

BY GENL. W. H. NOBLE.

Mr. Beecher's article in the May MONTHLY, hints of value in both. That of blunders lies in the telling. A good hearty blunder, frankly confessed, not only warns, but instructs. Out of failure often leads the pathway to success. Beyond a doubt, a chapter about blunders in the garden, would make one of the most valuable in its history. But the searcher for its materials, would, I fear, look upon a lean attendance at the confessional. The majority of us are slow to tell our blunders. Besides, lots of men blunder in the ruts of traditional methods, without knowing that those who went before, blundered all the way.

After all, our boasted human intellect is a very unsteady staff. Few men either think or observe, though they pride themselves on doing both. Half set down to the credit of our

brains, is only a mixture of old saws and whims. Opinions are all the while put forward, as if the outcome of thought and experience, when only a re-hash of the blunders of the blunderers gone before.

From one of these old time blunders in the garden, Mr. Beecher strips off the cover, when he tells, out of his experience, that "Summer and Winter Mulching is Supreme Safety for ornamental trees, and for fruit trees." That sentence is brim full of the soundest kind of sense. But if this is true, is not a blundering folly read of between the lines? In face of this new article in the creed of the garden, what becomes of the old rule of thick planting for a shelter? If mulching will save trees from that drying of the wind and sun, which sucks out the moisture from the root, soil, and the stem, what need of the thick planting clutter, which starts out unsightly and ends in torment? If "mulching is supreme safety," what is thick planting for shelter but a perpetual blunder? Who ever knew a tree to grow better in the nursery rows, than when firm planted and held in the sunlight and the breeze? The only other need besides this mulch, till the root fibres stretch their tie and brace throughout the soil, is a firm lash of the centre shaft of tree or shrub, to a stout stake driven deep and close thereto. Then the swaying of the blast will no longer snap and twist off the rootlets which, beneath the shelter and quiet of the mulch, lift the vital currents to the parts above. Nor, when so mulched and held, will wind or sun, suck up the moisture from the cool footings, which so delight the plant.

I confess, a thicket in private grounds or public park is my horror. Not when a thicket of Nature's make is left, or when one is gotten up as a feature. But when it is the outcome of thick planting for shelter and company, to be thinned out sometime, which sometime, if ever, always comes too late. Besides, a thicket is not the place for tree or shrub to gain the swing and spread of freedom. They need room to develop their best estate—room for their branches in the sun and air—room for the roots to range in wide feeding ground. You get neither from thick planting. Day by day there rises a spindling, spooky, impressive tangle and clutter, which is soon beyond cure. Go where you will, among the thick plantations bordering old estates, or visit like newer follies, and the same result faces you. The thinning has not come to either. It never comes. But a tiresome speci-

men of an embalmed folly is before you, which samples neither grove nor forest, nor decent thicket.

It would seem that the "Yank" should long ago have sent this old world folly into the outer darkness to which he has consigned so many important whim-whams. One single example of such wasted time and labor well undone is before me, in the grounds of Hon. Nathaniel Wheeler, of sewing machine immortality. An old world artist had, before his ownership, bordered his grounds with all the ins and outs, and thick planting of these irregular horrors. No end of toil and lots of money, and years of growth had been wasted in a trial after the picturesque. The only cure possible was like that of the Spitz dog, whose tail they cropped close behind his ears. Mr. Wheeler was not studied up in landscape; but a sound head, a broad nature and good eyes, had educated a taste which always finds its best help in large common sense. He tore out the unsightly wall of growth which hemmed in and dwarfed his grounds. With the help of fine fruit trees, and well-grown evergreens, in one season he changed the whole aspect and expression of his place. To-day, for grace of lawn and tree groups, and reaches of tasteful vistas all through its extent, I know of no more perfect specimen of sensible planting. But there was no thinning, no half-way work. His improvement was a new creation in his borders.

Before ending, let me give unction to Mr. Beecher's sentence. It is not the fancy of a man without long and large experience in the garden. He is no mere amateur. His study and work covers more than forty years of his sixty. His rule of "supreme safety" is the conviction forced on a shrewd observer, by years of trial. No man in this country, outside perhaps of some large nursery has had a wider and more varied personal planting than he. Every plant and tree tough enough to stand our Summer's sun and wintry blast, has a home beside him, to cheer and shelter his. I say, therefore, to all, heed well his counsel, of *Supreme Safety in a Mulch*, Summer and Winter. It is the voice of a Seer in the homeland and the wood.

RHODODENDRON OCCIDENTALE.

BY W. C. L. DREW, EL DORADO, CAL.

One of the grandest flowers I ever beheld is the *Rhododendron occidentale*, or California

Azalea. It is a native of California, where it grows along streams of crystal water in thickly wooded districts, throughout the State. The finest are found in the Sierra Nevadas, and the best I ever saw were in the section of county around the Silver Creeks, where they are covered with snow for four months in the year.

Rhododendron occidentale is a shrub growing three to six feet high; the foliage is the handsomest I ever saw; the leaves are lanceolate in shape, about four inches long, and one to one and a half inches across, of a rather firm texture when fully developed. In color they are a bright shining green, when half grown they have all the appearance of being freshly varnished, and as will be readily admitted by all who have seen it, this bright green foliage is half the charm of the plant, and makes a most charming setting for the large and conspicuous flowers.

The flowers are two and a half, to three inches long, with a conspicuous calyx composed of distinct oblong sepals, the corolla is usually snow white with the upper lobe yellow inside, they are sometimes, however, found with rose-tinted flowers. The stamens and style are much exerted, moderately curved, and very conspicuous. The flowers are borne in large clusters of from ten to twenty each.

Rhododendron occidentale blooms in the Summer, and is constantly in flower during July and August.

For Eastern gardens, I think it will be found the best of any flower which California has supplied, as it grows where the snow lays on the ground four to five months in the year, where it freezes eleven months, and yet where the sun in Summer will send the thermometer over 130°. The soil it seems to require is moderately light, black soil. It will not grow well under trees or in the shade, but requires plenty of sunlight.

PICTURESQUE LAWNS.

BY S. B. PARSONS, FLUSHING, N. Y.

The picture effects to be obtained by color in foliage are familiar to all who have studied nature. The Silver Poplars, quivering in the lightest breeze, relieve the more sombre Maples on the mountain sides. The light-green Tulip Tree and the darker Chestnut or Hickory are found together, while the White Spruce and the Hemlock aid to show off the beauty of each other.

The Autumn tints of America are a joy of beauty to foreigners, and a continual surprise to our own people. They are so by their strong contrast; the scarlet and the golden, the green and the white, the veined and the tinted, are all massed together, and the result is a picture of indescribable beauty.

These contrasts may be obtained in the Spring and Summer, as well as the Autumn, by the planting of trees in which they are constant. Gradations of color may give a harmony which is pleasing, and distance may be gained by using lighter tints for the back-ground, and darker for the nearer trees, but the true test is the expression of pleased surprise uttered by the novice or connoisseur on entering a forest or a lawn where these strong contrasts are found.

Some thirty-five years ago, on returning from a trip over the Alleghanies, in June, and then again on the Pennsylvania hills in all the glories of October, I was so impressed with the value of strong contrasts, that I aimed for them as far as possible in planting my own lawn. The result is satisfactory; and now that the trees so planted have been growing twenty-five to thirty-five years, the effect upon visitors proves that nature is right, and that it is always safe to follow her.

The general form of my lawn is that of an amphitheatre, of which the house is the center. The largest trees are on the outside, graded down to smaller ones on the inside. While immediately around the house is clear turf, upon which robin, catbird and thrush have their love passages and mock fights, like the performers in a Roman arena. I sit upon my piazza and watch them, thinking how happy they are, with no real estate in fee, and no taxes to pay, while the changing tints of a Summer afternoon gild or shade the quivering foliage of the trees before me. The contrasted colors form a picture worthy of the pencil of Cropsey, and when the sun comes, after a shower, the pendant drops sparkle like diamonds upon gold and emeralds. Perhaps the finest effect of these contrasting colors is just before a glowing sunset, when the shadows are thrown long upon the grass, and the leaves seem almost transparent with green, scarlet and gold.

It may interest some to know what trees are planted together to obtain these effects, and I will endeavor to describe them, as my eye rests upon them from the piazza, for they are nearly all within my view from that point.

The outside lines are Stone Pine, Hemlock, Norway Spruce and Austrian Pine, forty to fifty feet high. The color of the Stone Pine is a bright, refreshing green; the Norway Spruce is darker, the Hemlock still darker, and darkest of all is the Austrian Pine. Inside of these, two Lindens, one hundred feet high and sixty feet in diameter of foliage, stand guard, while one of them holds before her a grown-up child—a Silver Weeping Linden fifty feet high. The light-tinted Virgilia, fifty feet high and fifty feet broad, with its full racemes of snow-white flowers, is growing at the side of the Purple Beech, fifty feet high, whose dark tints are again relieved by the lighter foliage and pure white blossoms of a double flowering Cherry, which covers a diameter of fifty feet, and whose trunk, twelve feet in circumference, shows its remarkable age. The blue-green arms of the Weeping Larch, arms twenty-two feet long, on a body ten feet high, stretch out horizontally on either side, one of them grasping toward a Yellow Magnolia and the other resting upon a mass of Golden Yew. Against this last is a Magnolia Lenné, whose crimson petals just show their silver lining.

Near the dwelling, the Chinese Cypress stands sentinel, upright as a grenadier, symmetrical as an arrow, clothed with foliage soft as the green feathers of a bird, and a shade of pea green more delicate and refreshing than that of any tree I have. Its shape, a diameter of twelve feet to a height of thirty-five, is that of a true cone.

The Nordmann Fir, thirty feet high, stands alone in its grandeur. Its limbs are regular and symmetrical and its foliage compact. In the early season, the very light tint of the young growth against the darkness of the old is very charming, like gold upon ebony, or like the cheek of a fair child against the dusky one of its parent.

From this varied foliage, the eye wanders to the lighter color of an Atlas Cedar, forty feet high, and to the unequalled charming lavender tints of the Engelmann Spruce, relieved against the darkness of an Austrian Pine. The blueish-green of a Larch, fifty feet high, is contrasted on one side with the dark-green of Euonymus, clothed in the Autumn with its brilliant scarlet berries, while on the other side stand the lighter Lilacs and the graceful curves of the Weeping Sophora. The long arms of a Ginkgo, forty feet high, extend protectingly over the flowers

of a Red Horsechestnut at its side. The light green of *Cephalotaxus* has the dark steel tint of *Picea nobilis* on one side, and on the other the rich dark uprightness of the Irish Yew. A light Weeping Beech, thirty feet high and forty feet broad, and a dark Nordmann Fir, thirty feet high stand near each other. Light Weeping Hemlock and dark erect Yew stand together. White Lilac and dark *Euonymus* flank the portecochere. A Cutleaved Beech, twenty-five feet high and twenty-five feet diameter, with its symmetrical cone and its exquisite refinement of foliage stand by the darker Dogwood, clothed in white. A *Laburnum* produces both purple and yellow flowers. Erect Yew and Irish Yew, *Picea compacta* and *Pichta*, *Pinus monticola* and *Picea firma* go in couples.

(To be Continued.)

EDITORIAL NOTES.

THE PINES OF JAPAN.—Professor Rein thinks there are only three species of *Pinus* native of Japan, namely, *P. densiflora*, *P. Massoniana*, and *P. parviflora*. The two first are favorite trees of the Japanese, and are represented in lacquer and on porcelain ware, and living specimens are found in nearly all gardens. Some of the latter are curiously distorted, and from 200 to 500 years old, and they are regarded with an amount of veneration bordering on worship. Some of them have very long horizontal branches resting on the ground. *P. Massoniana* loves a sandy soil, is hardier, and perhaps rather larger than *P. densiflora*, and consequently more generally cultivated. It forms magnificent avenues, its rich dark green, long leaves being very beautiful. It attains a height of 100 feet, with a diameter of six feet. *P. parviflora* belongs to the group with five leaves in each sheath. It is widely dispersed in Japan, and reaches an altitude of 9000 feet, where it becomes shrubby. *P. koraiensis* is only cultivated in Japan.—*Gardener's Chronicle*.

PROPAGATION BY LAYERS.—Mr. Geo. Syme, an English gentleman, gives to Messrs. S. B. Parsons & Son, of Flushing, the following bit of information, which will amuse those who are acquainted with the modes of propagation in the best American nurseries:

"Considering the severity of the winters in the Northern States, and the consequent freezing

of the soil to a great depth, propagation by this means, of such plants as require to be what is technically known as "down" for two or more years, would be all but impossible, and therefore not profitable."

HOUSTONIA CÆRULEA.—This interesting native plant, the "Quaker Bonnet of Philadelphia," hitherto supposed not cultivable in England, is taking a new turn. The *Gardener's Chronicle* says: "On the rockwork at Kew is in flower a beautiful tuft of *Houstonia cærulea*. Growing at Kew so freely, it is strange to hear that elsewhere it never seems really to flourish. *Ethionema jucunda* is very charming, and forms a small but neat tuft of pink flowers."

NEIREMBERGIA RIVULARIS.—At a recent visit to Ellwanger & Barry, of Rochester, few hardy herbaceous plants were more striking than this. It was a complete sheet of snowy cup-like flowers.

NEW OR RARE PLANTS.

DOUBLE-FLOWERED ESCHSCHOLTZIA.—A doubled-flowered California Poppy, is among the latest novelties in England.

BLOOD-LEAVED NORWAY MAPLE.—A correspondent of the *Garden* thus refers to *Acer Schweidleriana*: "This hardy, free-growing, purple-leaved Maple should not be lost sight of by planters. It is a real acquisition, as far as effective contrast is concerned, amongst trees of light green foliage. The leaves of this beautiful Maple are bright reddish-purple when newly unfolded, very brilliant and glossy, and as large as those of the common *platanoides*, or Norway Maple."

A fine specimen was in Meehan's Centennial collection, which was purchased for Fairmount Park, and it has proved as well adapted to the American climate as its parent, the common Norway Maple.

TOVARIA OLERACEA.—This, by far the most handsome of all the *Tovarias* or *Smilacinas* yet introduced to cultivation, is now in flower in the herbaceous grounds at Kew. It approaches in habit the well-known *T. racemosa*, being about two feet in height, and the stems arch in the same graceful manner. The flowers are borne in broad racemes (about four inches across) at the apex of the stems, each individual being a half inch across, and produced in large numbers.

They are of a pure white color, which contrasts agreeably with the purplish color of the stem and flower-stalks. It lasts a long time in good condition. It is quite a recent introduction, having been sent to Kew from high elevations in temperate Sikkim; therefore it is quite hardy in this country.—*Garden.*

SCRAPS AND QUERIES.

NAME OF PLANT.—“Subscriber,” Pittsburg, Pa. We cannot name your plant from the portion of a leaf sent. It is not a *Wistaria*, if the whole leaf has but three leaflets, as in the portion sent to us.

AMARYALLIS LONGIFOLIA.—A Sacketts Harbor correspondent sends us a dry, over-blown flower of what appears to be this plant, of which she says: “There are eighteen to twenty leaves, from a yard to two yards long, greatest width two inches and a half, rising from the trunk or body not a foot high; nape two feet, bearing from two to fifteen lilies. A very beautiful plant.”

DARK-LEAVED NORWAY MAPLE.—With specimens of an unusually dark green Norway Maple, we have the following from a correspondent at Old Westbury, N. Y.: “I enclose a few leaves from a Maple, which is different from any variety I have seen. It came in a lot of imported trees, is symmetrical, and resembles in its growth a Norway, for which it was purchased, and the bark is darker. About ten feet high, three-quarters of an inch in diameter, leaves dark, shining green, like a gooseberry, and is very pretty. Bark smooth, not like English Maple in any way. As thee is acquainted with more kinds than I am, I hope thee can give its name.”

A HARDY GLADIOLUS.—A Doylestown, Pa., subscriber says; “I enclose flowers of a thor-

oughly hardy *Gladiolus*, which has remained out during the Winter for several years past where originally planted, and, as I understand, without any protection. It now forms a superb clump, and the flowers are certainly very showy. Will you be kind enough to name the variety?”

[This is the *Gladiolus communis*, not unknown in American collections of hardy herbaceous plants, and well worthy of the interest our correspondent takes in it.]

VARIATION IN THE CUT-LEAVED BIRCH.—A Rochester, N. Y., correspondent says: “I send you herewith a couple of sprigs taken from cut-leaved Birch. The tree is fifteen years planted, and large. A few feet from the ground a limb branches out from the body; three feet from the trunk of the tree this branch forks, each of the two resulting limbs being four or five feet long. One of these limbs bears the cut-leaf one, the other the plain leaf. It struck me as being a curious freak, and I thought it might interest you, so I send you a sample of the same.”

[This return of the Cut-leaved Birch to its original form is now and then seen, and is curious.—Ed. G. M.]

ANDROMEDA SPECIOSA.—With specimens of this beautiful hardy shrub, which is undoubtedly *A. speciosa*, a Hingham, Mass., correspondent writes: “Having read the article on the various species of *Andromeda*, in the *GARDENER'S MONTHLY*, I take the liberty of writing you to inquire can you judge from the enclosed if this is the *A. speciosa*. I have had it twelve years, and it is said to be that. Do you know the *A. pulverulenta*? I thought this not the *speciosa*. The one I have has been very handsome, having many spikes, covered with these beautiful white flowers from eight to ten inches long. Our Boston Society gave me, last week, their bronze medal.”

GREEN HOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

COOL HOUSE ORCHIDS—LÆLIAS.

BY C. H. S., BALTIMORE, MD.

This beautiful genus of orchids is closely allied to *Cattleya*, and some of the Brazilian varieties are found in catalogues, sometimes as

Laelias, and in others as *Cattleyas*. I think that they all come from Mexico and Brazil, except *Laelia superbiens*, which is from Guatemala. The difference between *Laelias* and *Cattleyas* is a botanical one, too scientific for the general amateur cultivator of orchids, for whose benefit these articles are intended. But a far greater

difference is found in the manner of growth, and time of blooming, of the Mexican and Brazilian species. The Mexican species do not require as much heat as the Brazilian; bloom mostly in the Winter or early Spring, and have longer flower stems. The Brazilian species are stronger in growth and bloom mostly in the Summer or Autumn, and can be cultivated as the Cattleyas. The Mexican species, I grow both in pots, or on blocks of wood, or cocoanut husks, and find they do well either way, though the plants on blocks require more attention during the season of growth. I grow all Cattleyas and *Lælias* in the same house, giving the Mexican species the coolest place. They all want plenty of light, especially when they are making their growth, and maturing their bulbs. If they are grown in too much shade, the growth will be watery, and very little success will be obtained in flowering them. These remarks are applicable to all orchids, that form bulbs.

When I first commenced the culture of orchids, though I made large growth, I was always disappointed in not getting bloom. A fact, that on imported orchids, very small bulbs showed signs that they had bloomed, led me to think there was a radical error in my management. I now give them all the light they will bear, even if the glass runs up to 90° or 95°. While I know that the direct rays of the sun does them no harm in their native habitats, I find that a little shade is advantageous in midday—say from 9 A. M., to 4 P. M. I have an awning on the outside, made of bagging stuff, which is open in its texture and gives a subdued light. I find this better than whitewash or any permanent cover. On cloudy days, or any time when the thermometer does not get over 75°, I keep it up. An awning 60x14 ft. of this material will cost about \$8, and lasts two summers. The power of tropical light, and the long enforced rest by drought that plants are called upon to endure in tropical countries, are factors that are not sufficiently considered in our cultivation of plants under glass. No doubt most persons who have bought newly imported orchids, have noticed their shriveled condition, and supposed it caused by their being so long gathered. The fact is, that it is caused almost entirely by the protracted droughts that they endure before they are gathered. I was once in Brazil, nearly four months at one time, and do not think we had four rains, and at no time was the thermometer below 65°, and up to 90° or 95°. One can easily conceive

what a parching it must be to plants growing on trees, from 10 to 50 feet from the ground, when every passing breeze takes away any little humidity that may arise from the ground.

MEXICAN LÆLIAS.

Lælia anceps. This is the finest of the Mexican *Lælias*. It has bulbs from four to six inches long, (with one stiff leaf, sometimes, but rarely two.) The flower stem is from two to three feet long, with from three to five flowers three to four inches diameter. Sepals and petals rosy lilac, lip purple with yellow center; blooms in Winter. *Lælia anceps delicata*, whitish sepals and petals, and purple lip. There are many varieties of *L. anceps*, differing slightly in size and shade of color.

Lælia albida, (Mexico), has small bulbs about two inches long. Two short stiff leaves, and flower stems from twelve to eighteen inches long. The flowers from three to six in number, are white with a yellow streak in the center of the lip; flowers two inches in diameter. There are several varieties of this orchid. It and all the Mexican *Lælias* are compact in growth, taking up but little room which makes them very desirable, as the blooms last thirty days, if kept dry.

Lælia autumnalis. In growth, much like *L. albida*, but stronger, sepals and petals lilac purple, lip rose and white; blooms in November and December; flowers about three inches in diameter.

Lælia acuminata. Flattish bulbs; flowers white with dark spot on the lip. There are some varieties, with rosy blush flowers and are called *L. erubescens*.

Lælia majalis. Has small bulbs, and makes its bloom with the young growth, and the flowers are very large for the size of the plant. It makes seldom over one bloom to a bulb, which is of a rose color, with a lighter lip. I have succeeded in blooming this *Lælia* but once. It requires the bulbs to be strong, and a good season of rest. Does best on a block with moss.

Lælia superbiens. Guatemala. This is a very strong grower. The bulbs are often nearly a foot long, and flower stems from four to six feet long, surmounted by nearly a dozen flowers from four to six inches in diameter; color, rose variegated; lip purplish crimson, striped yellow. Requires to be strong to bloom; it is said to grow on exposed rocks. I have not bloomed this yet, though my plant is larger than others that I have seen in bloom. I think it wants more light.

BRAZILIAN LÆLIAS.

Lælia purpurata. This is a strong growing plant, with a single dark green leaf on a bulb from six inches to a foot long. In growth, it is like *Cattleya*, as are most of the Brazilian Lælias. The flowers in the sepals and petals are from pure white to rose; lip crimson, or purplish crimson; flowers from two to five, about five inches in diameter, and last four weeks in bloom if kept dry. Blooms from May to August. There are many varieties of this beautiful Lælia, and are called in European catalogues after the one who first blooms them. *L. Russelliana*, *L. Brysiana* and others, are but sports of *L. purpurata*.

Lælia Perrinii. Rio de Janeiro. Has reddish bulbs and dark green leaves; reddish on the back. Blooms in October, with four or five blooms on a stem; flowers four inches in diameter; sepals and petals light purple, lip crimson. I have three or four varieties of this beautiful, free blooming Lælia. Some grow in pots, and some on the original wood from Brazil.

Lælia elegans. This is also a strong grower, often over eighteen inches high. Has flowers from blush to dark rosy crimson in the sepals and petals, lip purple. There are many varieties of *L. elegans*, but all are fine. It must be a scarce variety even in Brazil, as the price both there and in Europe continues high.

Lælia cinnabarina. This has slender bulbs from four to six inches long, with one stiff leaf. The flower stem is about a foot long, with from four to eight reddish orange flowers, about two inches in diameter. It is a very gay flower, and keeps in bloom a long time. It is a very hard variety to import, as if once dried too much they are hard to start. The bulbs are reddish.

Lælia crispilabia (*Syn.*) *rupestris*. In growth, like *L. cinnabarina*, but the bulbs are light green; flowers about 1½ inch in diameter, light rosy purple. Has about six flowers on a stem.

There are many other species of Brazilian Lælia, but I have not bloomed them: *L. prestans*, *L. Schilleriana*, *L. grandis*, *L. gigantea*, *L. xanthina*, *L. Stelzneriana*, and others are beautiful and well worthy of cultivation.

lebre, while ridding plants of most insects, including scale, mealy bug and slug, does not dispose of the green fly. Mr. Hogg was, therefore, led to add a very small quantity of Persian insect powder (*Pyrethrum roseum*), to the above solution. This he finds to be entirely successful, and applies with a hand syringe, out of doors, to keep his rose bushes clear of all insects.

DENDROBIUM NOBILE, VERSUS NOVELTIES.

BY MR. J. HOOD.

Around us everywhere the New crowds aside the Old, notwithstanding that many of the old flowering plants combined the useful with the beautiful in a high degree. Nevertheless, in some localities they have almost entirely disappeared; and yet they seldom have been surpassed, but only fallen under the ban of popularity. Possibly it sufficeth that they have been grown, and it became known what season they generally flowered, and what color and character of flowers they produced, therefore they no longer possessed that alluring halo of uncertainty, that enticing charm of novelty, so peculiarly attractive. Amid the many innovations has there been much real improvement in the direction of flowering plants, or is it the novelty that attracts and not the quality? A walk through several of the hot-houses of one's neighborhood will convince us, and I think our answer would be in the negative. Here are new, high colored *Dracænas*, beautifully marked and blotched *Marantas*, *Crotons*, *Dieffenbachias* and a host of others, all of which are undoubtedly beautiful. But where are the old flowering plants, or where are their superiors? They are wanting. What novelty will compare with a well grown and flowered specimen of that old plant *Dendrobium nobile*?—equally suitable for the establishment of the conservatory, hot-house, or warm fernery, or as a florist flower. It is curious that such serviceable subjects should be neglected when many plant growers are cognizant of the fact that there is a steady growing demand for fine flowers—flowers rich and choice. All cannot be accommodated; but the numerous indispensable novelties that are annually offered must have room, as not to grow those would certainly be non-progressive. But as the car of progress marches along, its path is sometimes winding, and its huge wheels frequently run in the mire of extremes; these extremes, perhaps, may be a

ADDITIONAL NOTE ON THE MEALY BUG.

BY DR. WM. F. CHANNING, PROVIDENCE, R. I.

Since writing my paper, Mr. W. S. Hogg informs me that, in his experience, (according with my own,) a solution of whale-oil soap and hel-

mania for *novelties, varieties* or *wonderful blue glass*, all of which are pursued with such clamor and ardor by their respective votaries, that the non-enthusiast is ready to exclaim, "let us alone."

VARIEGATED COBÆA SCANDENS.

BY G. A. H., PROVIDENCE, R. I.

Your notice of the variegated Cobæa scandens, in the May number, leads me to say a good word for it. A year ago I planted out in the green-house a small plant, which exceeded in luxuriant growth anything I had ever cultivated. The only difficulty was to keep it within reasonable bounds. At Christmas and Easter I cut perhaps two dozen sprays, from two to six feet long, without missing them. If put in water immediately they will keep in the parlor four to six weeks without wilting. It seems to me that the sprays would meet with a ready sale in Winter, as they are very effective and beautiful for decoration. The plant also bloomed all Winter, but I regard the blooms as of little consequence compared with the vine. It appears to be entirely free from insects.

Another climber which has been very satisfactory, is Tacsonia Van Volxemi. This grew nearly as rapidly as the Cobæa, but being delicate did not cover so much space. Since February it was constantly in bloom, until I cut it back a month ago, and the flowers far surpass any passion flower I have seen. The rich "Turkey red" blossoms seem to light up the green-house, and the fruit is very conspicuous. The blossoms last about three days. It was quite a novelty in this neighborhood. As my green-house is only about 12x24, and a very cool one, I think these vines could be grown by almost any amateur, but do not think they would do well in pots. I have other choice climbers not yet bloomed, of which I hope at some time to give a good account if desired.

EDITORIAL NOTES.

WALLFLOWERS.—We take the subjoined characteristic remarks on "Wallflowers in Paris," from the *Gardener's Magazine*: "Amongst the many rural elegancies that make Paris the freshest and brightest of cities, we must give a large place to the Wallflower. We see Wallflowers in plenty in all parts of Europe, and even in London they are not unknown. But really you

must go to Paris to see Wallflowers just right, and to learn thereby how cheap is beauty, and how universal is the medicine of gladness for the single eye that is full of light. On a sunny day in April you may see in the Parc de Monceaux, and other such places, what at a moderate distance look like beds of crimson Azaleas; but when you reach the spot you find them to be beds of Wallflowers, solid with bloom, quite uniform in height, and, as gardeners say, "as neat as if turned out of a bandbox." Almost invariably the sorts employed are the deep blood-red and the bluish-purple, all the slaty blues being repudiated, and the best yellows being scarcely anywhere represented. These blood-reds and purples are mixed throughout in equal proportions, and the near view of them is as enjoyable as the distant view is surprising. The odor diffused adds very much to the charm of the golden-green leafage of the trees overhead, for wherever these fiery masses of Wallflowers are to be seen there are also trees enough to make a bower of pleasantness to drive dull care away. How simple and inexpensive are the best pleasures!"

We may add to what the *Gardener's Magazine* says, that at Osborne House, the residence of Queen Victoria, the writer of this, visiting there last year, found immense quantities of these old-fashioned Wallflowers growing, of which it was said the Queen was passionately fond, and had the flowers cut and sent to her regularly when she was in London or elsewhere.

THE DOUBLE AMARYLLIS.—The parties who sent us the double Amaryllis had better hurry up with their prize, or, judging by the following from the *Garden* the old world folks will get ahead of them:

"A good double Amaryllis (*A. equestris* fl. pl.) is now added to the collection of the New Plant and Bulb Company at Colchester. It is said to resemble a double Rose, and flowering specimens which we saw in a dried state seem to justify this description."

CHAMELEON WALLFLOWERS.—A correspondent in the *Garden* has the following relative to that curious and interesting plant—the Chameleon Wallflowers: "This plant is the *Cheiranthus Cheiri* var. *Chameleon*, figured long ago in the *Botanical Register*. It is very aptly named, as its flowers are continually changing their color; on first expanding they are of a bright yellow, then gradually become bright purple, and this peculiarity, together

with its habit, suggests to me the probability of its being a hybrid between the yellow Scandinavian Alpine Wallflower (*C. alpinus*) or *C. scoparius* of Teneriffe and one of the purple Madeiran species—either *C. mutabilis* or *C. arbusculus*. I think it would be interesting if it could be proved; and perhaps Mr. Allen, who has paid much attention to the genus *Cheiranthus*, or some other skilled hybridist, will assist in ventilating this inquiry."

A CURE FOR THRIPS.—A correspondent of the *Journal of Horticulture*, says:

"Fumigating once a fortnight the houses in which it is present is a good means to adopt for eradicating it; and we have found that syringing the plants, &c., infested with a solution of soft soap and tobacco water is also effectual if applied once a week, at a temperature of 100° to 120°. Prevention, however, is better than cure, and if the plants are kept healthy by due ventilation and abundance of moisture both in the air and soil, the insect may be usually banished."

ORCHIDS.—We had a good illustration recently, of the ease with which orchids may be grown. A *Cattleya Mossiæ*, which had been "kicking about" in a florist's greenhouses with other plants, was flowering beautifully in an old basket. It was impossible to conceive of anything more utterly neglected and even abused. We should not be surprised to find these pretty things among the most popular of plants for window gardening, some day.

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NEW OR RARE PLANTS.

LUCULIA GRATISSIMA.—This is a vigorous greenhouse shrub or small tree of the Cinchona family, a native of Nepal, and though by no means a recent introduction, it is nevertheless quite rare in our gardens. One of the finest bloomed specimens of it I ever saw, is now (Dec. 10th,) in perfection at Such's nurseries South Amboy, N. J. It is planted out in the bed of a Camellia house, is some eight or nine feet high, has one hundred and five compound closely compacted panicles from six to ten inches in diameter, of large and showy rose-colored flowers, that are so powerfully and deliciously fragrant as to perfume the whole greenhouse. The plant has grown very thriftily, having produced several four feet long shoots this year; but Mr. Taplin tells me he cuts it in pretty close-

ly every year. It is never so satisfactory as a pot plant as it is when planted out where it requires no more care than a Camellia—plenty water and frequent syringing while growing, and in Winter a temperature not under 40° Fah., if possible. Its extreme floral wealth, and that too at a time—Christmas week—when flowers are in demand, certainly commends it to a first position among greenhouse shrubs. Time and again I have known *Luculia gratissima* to have been imported from Europe, but it was always dead when it got here; indeed, last year we got a plant of it from Kew, packed in a Wardian case along with dozens of other exotics, so that not a pot was shaken or a leaf disturbed, but the *Luculia* was dead as usual, and all the other plants but one, were almost as fresh as when they entered the case.

The following note from the *Botanical Magazine*, 68, Tab. 3946, may be of interest: "It is impossible, says Dr. Wallich, to conceive anything more beautiful than this tree, when covered with its immense rounded panicles of pink-colored, very fragrant, large blossoms. It is a native of Nepal and Silhet, in the former country growing in great abundance on Nag-Urjooro and some of the other smaller hills in the valley; also at Bechiako and Koolakan. It delights in exposed, rather naked situations, flowering, according to the locality in which it is to be found, nearly the whole year through." F.

LUCULIA PINCIANA.—is another species, in leaf and habit very like the preceeding, but the flowers on the upper side are pure white, changing in age to cream tinged with blush; the outside is deep blush and the tube red. It was raised from seeds received from Napal by Pince, of Exeter, England, and is reputed as finer than *gratissima*. The immense compound cymes being larger and sweeter. I am not aware of its being in this country. F.

NEW ZONAL PELARGONIUM. DR. DENNY.—All new varieties of Pelargoniums, heretofore, have generally had a great deal of sameness about them, but in the new Zonal, Dr. Denny, there seems to be a variety that looks as if it were to be the forerunner of an entirely new class.

In the *Florist and Pomologist* for June, there is a beautiful illustration of this variety; the flowers appear large and of good form, the petals are nearly blue, and at the base of the upper

petals there is a dash of bright orange scarlet. The combination of color is the great novelty.

ADIANTUM PRINCEPS.—This splendid Fern, one of the finest of the Maiden-hairs, introduced by us from New Grenada through Mr. Gustav Wallis, and was figured in the *Gardeners'*

length, with the lower pinnules bipinnate, so that the frond itself becomes quadripinnate.

The pinnules are large, the upper corner obliquely overlaying the rachis; the base margin is entire and slightly curved, the inner side, or that turned towards the rachis, being also entire;



ADIANTUM PRINCEPS.

Chronicle of August 14, 1875, and described by Mr. Moore in these terms:

"Not only does this Fern possess a degree of boldness of character on account of the size of the fronds, and pinnules, but the plants are also remarkably graceful from their fulness of development, and the arching or pendant position they assume. The fronds are broadest at the base, the lower pinnæ being about a foot in

while the somewhat rounded anterior margin and truncate apex are cut into broadish shallow lobes, and are generally fertile throughout, but when sterile are minutely serrulate. The terminal pinnule is larger than the rest, sharply cuneate at the base, and spreading out into a fan-shaped figure, that at the top of the frond being fully 1½ inches across."

It is one of the finest of all exhibition Ferns. It

was awarded a First Class Certificate by the Royal Horticultural Society, August 4th, 1875. It was much admired when exhibited at the International Exhibition at Cologne, August, 1875, and at Edinburgh in September.—MESSRS. J. VIETCH & SONS.

DOUBLE-FLOWERED CINERARIAS.—According to all accounts these continue to improve with each succeeding year.

SCRAPS AND QUERIES.

CALCEOLARIAS.—With a box of remarkably beautiful flowers, we have the following note from Mr. Roderick Campbell, of the Forest Hill Cemetery, Utica, N. Y. If the publication of this note shall lead to an increased culture of this beautiful flower, it will do good to flower culture:

"I have forwarded to your address, by mail, two boxes of Calceolaria flowers, from seed sown last Sept., 1877. The plants are grown in 6 and

8-inch pots, and number 260 plants; the smallest plants average 18 inches through at the top, and the largest 26 inches at the top, and about 18 inches high, one mass of flowers, and just as you see them. I should be pleased to know what you think of them. They are arranged around the large conservatory, and make a splendid show."

AMARYLLIS.—Jas. R. Townsend, New York, writes: "Will some of your correspondents, who have had experience, give me some information regarding Amaryllis Belladonna and Vitata, and the Nerine. When they should be dried off, and for how long, and when they should be started into growth again; should they be kept without *any* water, like the other Amaryllis? Secondly. By proper attention to growing and resting, can they be made to bloom every year like Amaryllis Prince of Orange, Regina, &c., &c.? The writer has no trouble with these, but the Belladonnas and others will not bloom. Any information you can give would much oblige. The writer has no green-house, only cold-frames and hot-beds."

FRUIT AND VEGETABLE GARDENING.

COMMUNICATIONS.

NEW EARLY PEACHES.

BY CHAS. DOWNING.

During the past few years many new varieties of early peaches have been introduced, commencing with Alexander and Amsden, in this country, and Early Beatrice, Early Louise, Early Rivers, &c, by Thomas Rivers of England. About the 20th of June I received from D. S. Myers, of Bridgeville, Delaware, specimens of Kinnaman Seedling, which originated with Samuel Kinnaman, of Delaware. Fruit of medium size, roundish; skin pale brownish-red, on a pale greenish ground; flesh greenish-white to the stone, juicy, sweet, and of very good flavor, and adheres partially to the pit. It is said to be some days earlier than Alexander or Amsden. Also about the same time, specimens of the Thomas Burns peach were received from Thos. F. Burns, of Mt. Pulaski, Illinois, who writes me "that it is the earliest peach known, being nearly a month earlier than the Alexander, in this climate. The tree bore about a half bushel, all ripening even, and about the

same time—June 15th. For beauty of color and hardiness of tree I think it cannot be surpassed, and it being a cling, also gives it precedence over any other variety. The tree was bought for Hale's Early, but proved to be a seedling." Fruit rather large, roundish, slightly depressed; suture large, ending at the apex, which is a small point; skin whitish, shaded and mottled with light red nearly over the whole surface; flesh white to the stone, to which it adheres; juicy, melting, sweet, and very good in quality.

A month earlier than the Alexander, or any other variety, is certainly a great advance, and I think there must be some mistake; either the tree stands in some favorable locality, or some other cause operating to ripen it so early. Mr. Burns does not state whether the Alexander grows near this variety or not, which would have given a better test as to earliness. [Mr. Downing writes, as we are correcting this proof, that it is the Alexander.—ED.]

Another seedling, claimed to be two weeks earlier than Amsden, was found on the premises of a Mr. Morrow, and now owned by W. L. Brown, of Ashley, Illinois. The tree is three years old, and the fruit is said to be very beauti-

ful, and one of the finest flavored. I have not seen this variety.

The Callie Scaffold peach was sent us by J. D. Scaffold, of Watervalley, Kentucky. They were so much decayed I could judge nothing of its merits, but Mr. Scaffold and other persons inform me that it is very fine, and equal in every way to Amsden, if not better, of a higher color, and about eight days earlier. It is a seedling of the large Early York, four years old, and ripened its first fruit this season the 27th of May.

Dr. J. H. Watkins of Palmetto, Georgia, has been collecting and testing all the new varieties he could obtain, and writes me "that I have fruited together this year, on the same tree, Alexander, Amsden, Honeywell, Early Canada, Briggs' May, Beatrice, Louise, and Rivers peaches. The separate limbs were eight to ten feet long, and had on quite a quantity of fruit. In appearance the first four were strikingly similar, the Honeywell slightly smaller, but equal to any in flavor, with the exception, possibly, of Early Canada, which showed the highest color, and, as my little children would say, 'it's a black peach,' (where well exposed.) If there was any difference at all in the earliness of the first four peaches, the Canada certainly had it; the Canada is almost a perfect freestone, adheres very slightly, unlike the others in this respect, so far as I had an opportunity to examine. Briggs' May followed these four in one week, was smaller, but quite passable in flavor; then came Beatrice, Louise, Rivers. Rivers is fine for home use; Louise first-rate, but small; Beatrice too small; Wilder will most likely take the place of all peaches ripening between Alexander, Amsden, &c., and Hale's Early, Tillotson, &c.

"I failed to fruit Mr. Engle's peaches this season, but Wilder, Saunders and Downing were fruited near here—Downing is not thought equal to Alexander. The hardness of trees, quality and appearance of fruit, size, flavor, &c., will determine which is most suitable for general cultivation—Alexander, Amsden, Honeywell, Downing or Early Canada, as the slight difference in time, where it exists, is of no practical value. Perfect specimens of Alexander, Amsden, Honeywell, Early Canada, were ripe this year the 1st of June; in 1877, June the 7th; in 1876, June 20th.

"Will it not take two or three years yet with trees, or a tree of each variety, growing side by side, on the same soil, with same culture, to decide fully as to time of ripening? (Yes, to

give a decided opinion, five years from its first fruiting is not too long.) I have a single tree of each variety, I have arranged them in this way, besides Musser, Cumberland, and a number of other kinds, said to be extra early, in addition all the old kinds, and, indeed, I may say one of each of all varieties in general cultivation, without regard to period of maturity; and next year, if we have fruit, I will be able to report faithfully as to the behavior of Mr. Engle's peaches in this section, by the side of all those mentioned. I am very much struck with the growth of Musser, it is extremely vigorous and healthy in appearance, and Cumberland is very little behind it."

My experience with Alexander, Amsden, Honeywell and Early Canada, with two years' fruiting, is about the same as Dr. Watkins, and, as I have before stated, that if the four kinds were put in a dish it would puzzle a good pomologist to separate them, and yet there is no doubt but that they are all distinct kinds.

DWARF JUNE BERRY.

BY H. E. VAN DEMAN, GENEVA, KAN.

I see by the June number of the GARDENER'S MONTHLY that you doubt the existence of a dwarf species. There would be no doubt in your mind if you would see plants grow and bear and propagate for ten years, when not over three feet high. One kind that I have never gets over two feet high.

THE DWARF JUNE BERRY.

BY H. W. WILLIAMS & SONS, BATAVIA, KANE CO., ILL.

We enclose you two photographs of the Dwarf June Berry, one representing the plant in bearing, the other a single cluster of fruit, natural size. They are both good representations of the manner of growth, and size and coloring of the fruit, being both taken when the fruit was ripening. We have cultivated them for seven or eight years, having procured them of a man who claimed they were the genuine Whortleberry, which could be cultivated in the same manner as any other fruit. The plants have never grown higher than four feet, and yield every year an enormous crop of fruit, or rather would, if the birds could be induced to let them alone, but they seem to have a peculiar fancy for them, picking into them before they are half ripe. The fruit we do not consider

worth growing, though it might prove valuable in localities where nothing else would grow, as it is perfectly hardy, and never fails to produce flowers in abundance, and would fruit but for the birds.

It is grown and used by many in this locality, and by many the flavor is liked, though the majority pronounce them worthless.

[The little apples in this photograph are the size of Clinton grapes, and of a sort of royal purple or plum color, and quite unlike the ordinary June Berry of the Eastern States.—Ed. G. M.]

EDITORIAL NOTES.

EARLY PEACHES.—We have to be very careful about reports of earliness or lateness of fruits. At the recent meeting of the Georgia State Horticultural Society, Mr. Robinson stated the Alexander ripened ten days before Beatrice, and Mr. Stark that it ripened ten days later than Beatrice, with him. Knowing that reporters seldom get the exact spirit of the remarks, it might be thought there was some misapprehension here, but Mr. Moses is reported as saying "Mr. Stark's must be an exceptional case," and is followed by Mr. Hartridge, who says, "Alexander and Beatrice ripen together." Mr. Berkman is also made to say Beatrice was ten days later with him than Alexander. Mr. Robinson declares, with him the two ripened together, trees not twenty feet apart.

It is evident that comparative ripening is, in some respects, an unknown quantity.

LEAF BLIGHT IN THE PEAR.—From the following, which we find in the *Gardener's Chronicle*, it seems they are troubled with the leaf blight in the pear, in Germany, as we are in America, if, indeed, it was not from some of those European countries that we first received it:

"The Pear-leaf Fungus—*Roestelia cancellata*. I shall be glad if some of your readers would give their experience of this fungus, and, if possible, suggest a remedy. I have now for three years been sadly troubled with this parasite. Last year it caused great devastation, and did not confine itself to the leaves of the Pear tree, but attacked the wood and fruit. Last year I sent you samples of leaves, &c., and the answer you gave me was, 'It is the well-known fungus, *Roestelia cancellata*. Burn the leaves where ever you find them.' Now, I think if this fun-

gus was so well-known as you state, more would be spoken or written about it; I can only boast of twenty-five years' experience in gardening, most of which has been spent in places where fruit was grown to some extent, but never have I seen this fungus in anything like the same abundance as at present, and only on one or two occasions have I seen it at all. [Our correspondent lives in Germany, we in Old England. Hence, perhaps, his good luck in seeing so little of it. Eds.] Much is written about the Colorado beetle, but I really think there is less to fear from that than from this fungus. As to burning the leaves as suggested, it would with me be a great task, when I state that I have about 1000 trees in all shapes and forms. Lastly, I would like to know whence the fungus comes, what time is best to look out for it; and how to destroy it when it comes. I find, in looking through the trees this morning, that it seems to be spreading very fast again.—H. B., *Antholt-a.-R.*"

It is well for those who think that "American Pear Stocks" are risky, to remember that they may run some risk even from European ones.

FLEITAS ST. JOHN, OR YELLOW ST. JOHN.—Amid the differing opinions on the many peaches, the members of the Georgia Horticultural Society, at a recent meeting, were almost unanimous as to the value of this one. It is said to ripen just after Hale's Early.

THE FILMORE STRAWBERRY.—At the Atlanta Pomological Society, discussion came up on this old kind, and it was voted that for marketing and for family use it was "the best late berry."

PEACH GROWING SOUTH.—The *Southern Enterprise* says: The demand for trees for planting next winter will be beyond all precedent in the history of our State. Large growers are already ordering stock for next season's planting.

CHERRY CULTURE IN GEORGIA.—The *Southern Enterprise* says of the Atlanta Pomological Society: "This society has demonstrated that the sweet cherry may be successfully grown in this section, and has collected a very fine list. Those exhibited at their meetings would do credit even to Piedmont, Va., the home of the cherry. Every farmer should have a few cherry trees on his place.

GOOD FRUIT DRYERS.—A committee of the Southwest Georgia Institute Association make the following report: "Your committee, to whom was referred the Granger and American

Fruit Driers, beg leave to submit the following: "After careful examination, we consider them among the most useful inventions of the age, and invaluable to those parties who wish to preserve fruits and vegetables for winter and spring use. We would certainly advise all parties who may be able to do so to purchase one or the other of them."

ASPARAGUS IN ENGLAND.—

In the *Garden* for June 1st, there is figured a specimen of asparagus that was entered for the prizes recently offered by Mr. Robinson, for improved asparagus culture. A specimen of one stalk figured measures at the base fifteen inches in circumference, and two inches from the top it measures two and a quarter inches around. Fifty heads of this asparagus weighed seven pounds. If this is the best they can raise in England, we believe that asparagus growers here can go far beyond.

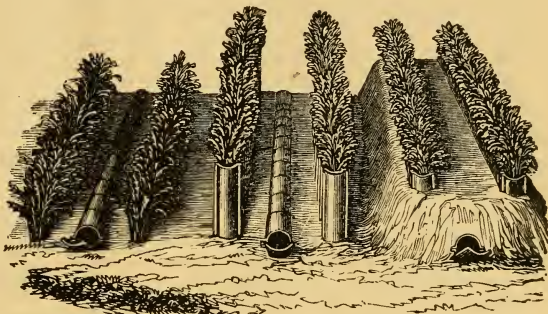
EARLY CHERRIES IN GEORGIA.—May Duke and Coe's Transparent, are considered the two best cherries in Georgia.

LONGWORTH PROLIFIC STRAWBERRY.—As a companion question to "what becomes of all the pins?" we may have what becomes of old varieties of fruits and vegetables? There was Longworth's Prolific Strawberry, for the raising of which the Cincinnati Horticultural Society gave Mr. Nicholas Longworth a hundred dollar gold medal, and which we thought had long since wasted away like an old pin. But it seems to be not only in cultivation, but the Atlanta, (Ga.,) Pomological Society, vote that they intend to keep it there awhile longer yet.

INSECT TRAPS.—M. Carrière, of Jardin des Plantes, says the *Journal of Horticulture*, reports on baits for insects, that "beer and water" caught 850 flies and other winged creatures; "pure beer" 631; "crushed pears," "weak wine," and "pure wine" came next in the order given, and pure honey at the bottom of the list, with only seventeen victims. This would seem to disprove the literal truth of the old saying (correct as it is in its moral) that "we may catch more flies with a spoonful of honey than with a gallon of vinegar." No doubt, however, the "loud" odor of the beer, which was in a highly fermented

state, had a great deal to do with attracting the insects.

BLANCHING CELERY.—An exchange tells us that "Mr. E. Ruhlman explained his novel method of growing Celery for market at the late Conference of the Western New York Horticultural Society. "Its novelty consists in the use



of an open tin band 3 inches wide for each plant. Put around the young plant when first set, gradually drawn up as the banking proceeds, and kept on when the plant is stored in the cellar, it protects the young plant, preserves the outside leaves, makes the labor of banking and storing much less, and makes a better product."

[We think however, that the method we described in one of our early volumes, of using horse shoe tiles is much better than tin, as being cheaper and more durable. As this may be forgotten we give the above illustration of the plan.]

NEW OR RARE FRUITS AND VEGETABLES.

THE SHARPLESS STRAWBERRY.—At the recent reception of the Pennsylvania, Horticultural Society, Mr. Mercer exhibited some berries of this variety, which was first favorably noticed in our magazine. When at Rochester, recently, we saw a large number of kinds in trial beds on the grounds of Ellwanger & Barry, and this was the best of all. The writer of this heard one gentleman regretfully say, "I might have purchased the whole stock of that kind, and I made a great mistake in letting the chance go by."

SCRAPS AND QUERIES.

BOWER'S EARLY PEACH.—M. & M., Frederick City, Md., under date of July 1st, send us the following note: "We send you to-day another specimen of Bower's early peach, but as it is dead ripe and bruised in places so that the juice is oozing from it, we fear that it will be rotten before it reaches you. We would have sent it last week, but the tree is twelve miles from here, and we had no idea it was ripe so soon; it had but very few on it this season, there being a general failure of the crop in this section. The one we send measures $9\frac{1}{2}$ inches around, weighs 7 ounces, and was ripe on the 26th of June, all of which leads us to believe that it is as early as the earliest, and as to the size and quality, as good as the best. We should have said that one side is partly eaten by the birds, which will probably hasten its decay."

[It gives us pleasure to say, that the specimen sent, agrees with all that the writers say of it. It is a great pleasure to see so large a size with so early a fruit. The flavor was exquisite, so far as it is possible to judge from a single specimen sent from a distant locality we should say this was a long way in advance of our best early kind.—ED. G. M.]

WATERING STRAWBERRIES.—N. J. R. Sharpless, Catawissa, writes: "The late wet spell has demonstrated to my satisfaction that strawberries are benefited by frequent rains, while in fruit. Now as I propose to set a bed of them within one hundred feet of a well, and could attach a hose to the pump, and syringe them with cold water from the well in a dry time, would wish to know whether it would be beneficial or not."

[We believe it would.—ED. G. M.]

QUINCE DISEASE.—E. G., No. 35 Wall street, Trenton, N. J., writes: "If you please give me some information about a quince tree which I have. It seems as if there is a fly or some kind of insect stings the limb in the night, then, the next day, it withers up and dies. I cannot see anything on the foliage or limb. The soil is in good condition. If there is any remedy for it, please let me know."

[This is probably the ordinary quince blight; but beyond the probability that it is the work of a minute fungus allied to the fire-blight in the pear, nothing is known.—ED. G. M.]

THE PEACH CROP OF MILTON, KENTUCKY.—At the Peach Growers' Meeting, at Milton,

Kentucky, it was reported that the peach crop this year in that section would only be one-half of what it has been in other years.

LABOR AND WAGES IN KENTUCKY.—The fruit growers of Kentucky, will pay their men 75 cents per day this season, for picking fruit.

KINNAMAN'S SEEDLING PEACH.—D. S. M., Bridgeville, Del., writes: "I sent you by mail two peaches, a new Delaware seedling. We call it Kinnaman's Seedling, originated with L. Kinnaman, of Sussex county, Del. A tree now eight years old, healthy tree. Other years the peaches were eight inches around, but it has been so cool. Peaches small; I think it will prove somewhat earlier than Amsden or Alexandra."

[There is so much resemblance in all these small early peaches, that all we can fairly say of it is that it is a sub-clone and as good as other popular candidates for peach favors. Its exact value will depend on careful observations with other rivals in the field.—ED. G. M.]

BAND FOR CODLING WORMS.—At the late Nurserymen's Convention, at Rochester, belts for placing around apple trees were exhibited with cotton fastenings on the interior surface, soaked in some poison, probably Quassia, by which the eggs are destroyed in the cotton without the necessity of taking off the bands and destroying the eggs. We have since received the following from a New York correspondent. "Are you favorable towards the party who claims a patent right on the mode of taking the apple worm, such as shown at the late Convention. I think, myself, if he has procured a patent it is simply an outrage."

We are not quite sure we take in our correspondent's meaning. We have a great admiration for the man who, when he discovers a valuable fact in horticulture, gives it freely to all for the public benefit. But if one chooses to make a profit for himself by the exclusive use of his discovery, it seems a very natural thing as the world goes. It seems that the saving of the labor and trouble of changing the bands is a novel and valuable discovery. It is certainly new to us.

DYEHOUSE CHERRY.—Mr. R. J. Black, Fairfield County, Ohio, writes: "I saw a few specimens of Dyehouse, the culinary cherry recently brought to notice, and which for many years has been giving such excellent satisfaction in central Kentucky. After fruiting it for several years, I may say that I am very much pleased with it. Not only is the quality

very good, but it bears well. You will notice the kind is very small, exceeding even Shannon in this respect. It is probably the most valuable of all Cherries for the South; and is very desirable anywhere. Tree grows well."

We are much indebted to our correspondent for the opportunity to see this variety. They had a curious experience in reaching us—and that they finally came well to hand after a week of fight with the government, is a great deal in their favor. Our correspondent put up the box in strict accord with the strictest rulings of the post office department; and not to rob the government even of a penny message, wrote the name on a penny postal card, which was slipped under the wrapping twine, so that all might come together. The ruler decided that this subjected the whole to letter postage. We grumbled at this heavy sum, for a few cherries, whereupon

the package was retained by the government. We appealed to the government, protesting that there was no writing contained in the parcel or on the wrapper, and that the postal card was entirely independent, and could easily have got under the string by the motion of a mail bag. Then we were informed that we were to be fined, not because the postal card was attached to the box, but because the box was attached to the postal card. Then we took the trouble to show that this also was untenable, and finally our good government acknowledged itself wrong, and the dear little cherries were restored to us. It is high time that this nonsense about writing on or in a package, when at best the government could not be cheated out of more than a penny postal, was abolished. When a written letter cost a quarter, there was some sense in it, but it is ridiculous now.

FORESTRY.

COMMUNICATIONS.

YELLOW COTTONWOOD.

(IOWA HORTICULTURAL REPORT.)

The opinion is common in central and eastern Iowa, that Cottonwood is only valuable on prairies for windbreaks, as the wood has little value for fuel or for any uses of the farm or workshop. The variety—if it be merely a variety—abundant on the Missouri, and also found sparingly on the Des Moines, Iowa, Cedar, &c., in central and eastern Iowa, known as yellow Cottonwood, really has an economic value, aside from its value for shelter-belts, that should be better understood by our prairie settlers. Bryant says of this variety: "Its heart wood is of a yellowish color, not unlike that of the Tulip tree. It grows in the same situation as others of its kind and is split without difficulty into rails. Shingles have been manufactured from it which lasted a considerable time. When sawed into lumber it does not warp like the Cottonwood generally. If *Populus angulata*, and *P. monilifera* are really distinct, it is a matter of uncertainty to which this variety belongs. The subject should be investigated." Judge C. E. Whiting has grown this tree extensively for a number of years on the Missouri bottom in Monona county, and has expressed his views as follows:

"We have in the Missouri bottom both the white and yellow Cottonwood. In speaking of the Cottonwood as a valuable timber, I speak alone of the yellow. I have fence boards of this yellow Cottonwood upon my farm that have been in use for fifteen years, and they are yet good. My house is sided with Cottonwood, has been built ten years, and looks as well as any pine siding in the country, and stays to its place well. It is really better as fencing than Pine, being tougher and stronger. It stays to its place as well, and is equally durable. I need hardly say it has no rival in rapidity of growth, as it far outstrips the Willow. Along the bars of the Missouri are millions of seedlings. They grow up upon these bottoms over a great extent, like prairie grass. There are enough of them to plant groves over every prairie in the State. I went ten miles from home, and in one day took up thirteen thousand, eighteen to thirty inches in height, for my own setting. With ground ready, a good hand can set two to three thousand per day. The fall is the best time to get seedlings from the Missouri bottom, on account of the high water in the spring. I set Cottonwood posts from old trees, on the bottom, in the spring of 1860. I moved this fence last fall, and nine-tenths of them are yet good. The yellow Cottonwood split up green and put under a dry shed to dry

is good enough for my folks to use for fuel. Of my first planting of Cottonwood twelve years ago, the best of them now measure sixteen inches in diameter. We would make plantations very thick; I now plant 4,356 trees to the acre; this shoves them up straight and symmetrical. In this way we get the dead sure thing on the side-branch business."

A LARGE WHITE OAK.

BY CHAS. BLACK, HIGHTSTOWN, N. J.

There is a White Oak tree standing in the public highway, about three miles from our town, which I have always believed to be the largest in our State, and have never seen the account of any as large elsewhere. It is perfectly healthy and vigorous yet. It has a trunk of twelve feet, which is nineteen feet in circumference three feet from the ground, and sixteen feet at six feet; it is seventy-five feet in height, and is one hundred and twenty feet in diameter through its branches. Can anyone beat this for a White Oak?

EDITORIAL NOTES.

HARDY CATALPA TREES.—A correspondent inquires what we know about "the hardy Catalpa." There is but one species of Catalpa that we know of. Some have believed they have a variety that blooms a little earlier than the other, and this may be; it is also said that one variety grows straighter than the other. We can only say there are trees in Pennsylvania, four and five feet round, that have endured winters when the thermometer has indicated 20 below zero, and are as straight as gun-barrels. We do not know in what respects the "hardy" and "straight" Catalpa is harder or straighter than these, and should be glad to know.

There is one point worth noting. In some situations the Catalpa, in common with the Pawlownia, Chestnut and other trees, dies back the first year, and often the second; or if not dying right down, loses its terminal bud, and this makes the stem a little crooked. If we were growing Catalpa for timber we should let it grow as it will for two or three years, and then cut clean to the ground, a clear straight sprout, ten, fifteen, or even twenty feet high, is the result; and it goes on without dying back after. We have seen Catalpa that made a sprout fifteen feet high and ten inches round, in one season, when cut back in this way.

THE HARDY COLORADO FIRS AND SPRUCES. We are glad to be able to announce that in a few years the very valuable Colorado species, Douglas', Menzies', and Engelmann's, will be within reach of all, Messrs. Douglas & Sons, of Waukegan, Ill., having succeeded in procuring last season a large supply of the seeds of these trees, which have already germinated finely. The crop of *Abies Menziesii*—the Blue Spruce of the Cambridge garden, or as it is known in England, *A. Menziesii Parryana*, is enormous, consisting of many hundred thousand plants. The test to which these Colorado conifers have been subjected in various parts of New England, proves, without doubt their hardiness and value for all the northern portion of this country, and for Northern Europe; indeed at St. Petersburg, but three coniferous trees have yet proved hardy, and of these *Abies Engelmanni* is one.

It is suggested that these trees will be found able to resist the trying climate of the plains of Nebraska and Kansas, where thus far the Red Cedar alone among coniferous trees succeeds, and where there is a special need of evergreen wind-breaks and shelter plantations. We shall be disappointed if the Colorado *Menziesii*, with its rigid foliage and compact growth, does not make the best evergreen hedge-plant which has yet been tried in the Northern States.

Since the above was written, the venerable pioneer in American forest tree raising, the Senior Douglas walked into our office. Of course we talked with him about the above matters of interest, and finally mentioned that we had prepared a paragraph already about it. The modest old gentleman was horrified. "Please don't put that in, people know I have visited Philadelphia, and they will think at my request or desire, you have done this." Well, it is a pleasure to hear a man talk like that in these days; but still we do not know why the public should be punished in not getting a good piece of news, simply because we had the good fortune to enjoy Mr. Douglas' company.

FORESTRY IN PORTUGAL.—Those whose education reaches no further than what they see in the papers, must have a happy time in knowing what to believe. Take this, for instance:

"It is reported from Texas, sprigs of Pine, Holly, Dogwood, Elm, Ash, Walnut, Apple and Peach have been grafted on a Texas Oak tree, and grew right along as though nothing had happened. Taken altogether, they constitute

the most remarkable "happy family" of the horticultural kingdom."

Then we have been told on the very best authority that "Portugal is nearly destitute of timber, having only 4.40 of its acreage under trees." And now comes Mr. W. B. Hemsley, and he says of Portugal:

"Woods of *Pinus pinaster* cover altogether an area of nearly 40,000 acres, and *P. Pinæa* be-

tween 5000 and 6000 acres, and the timber is more costly than Pine wood imported from the north of Europe. Great and successful efforts are being made to increase the area of forests."

If we have 45,000 acres of these two species alone, we would not be surprised if the woody area did not foot up handsomely when other trees are taken in.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

A MURDEROUS PLANT—*DARLINGTONIA CALIFORNICA*.

BY J. G. LEMMON, TO THE CALIFORNIA ACADEMY OF SCIENCES.

No plant indigenous to the Pacific coast is more profoundly interesting than our *Darlingtonia Californica*. The eye of the uncultured tourist or listless stock-man, no less than the studious naturalist, is at once fascinated when first its secret haunt is invaded in the fastnesses of the Sierra Nevada. A startling mass of green, yellow and crimson snake-heads, high raised in air and thrusting enormous, flaming, forked, curling tongues in every direction; a developed warning principle in the passive vegetable kingdom; a table-turner upon an old eternity-endured enemy; a coming plotter against an alert foe; an ingenious deluder of the unwary; a cruel murderer of the alarmed; an insatiate vengeance-taker; a bold, watchful, cold-blooded, confederated assassin—the *Darlingtonia* forms a frightful spectre of the shadowy swamp, a horrid incubus of subsequent dreams!

"Abhorred shape! That only grace of beauty takes,
And brilliant knees to compass evil."

A CONSUMMATE VILLAIN.

The paraphernalia which the *Darlingtonia* employs for attracting its victims is that of the saloon-keeper and the Cyprian: gaudy colors, ravishing odors, delicious sweets and delightful apartments. Its machinery for destroying them is that of the highwayman and the arch-fiend, deceitful traps, tripping obstacles for the feet, smooth declined planes, pointed dagger-thrusts from behind and silent wells of oblivious waters. What of enchantment and bewilderment is not furnished by the many-colored, revolute, honey-coated mustache, inviting to the spacious,

vaulted, sugar-lined, many-windowed hood of the large, tall leaves. Each robust plant provides extra by sending up a long, slender, shining flag-staff and suspending a flaunting array of green, gold and crimson bunting, loosely enfolded nectaries of scented sweets, the curious flower of the *Darlingtonia*. Surely no member of the vegetable kingdom has so remarkable and unmistakable a mission, none steps so far out of its normal state to perform it, and none executes its trust with more ingenuity and success.

MODUS OPERANDI.

How the *Darlingtonia* is constructed and the mode and results of its warfare have been made the subject of searching expeditions and elaborate essays by Darwin, Hooker, Gray, Canby, and recently by a fellow-member of this academy, Harry Edwards. But I trust that an enthusiastic botanist, whose facilities for observation have been most fortunate, may be pardoned for presenting a few facts, gained, not without many different interviews of this notorious rogue, at various seasons of the year.

Living less than sixty miles from one of the few localities where the *Darlingtonia* is found in its best estate—Butterfly valley, near Quincy—I make yearly pilgrimages to its home, I camp by its battle ground, I conquer my repugnance to its hideous aspect and its cruel work, become accustomed in time to the stench of its rotting victims and I carefully study its wondrous mechanism. I note its aspects, and appliances varying with the seasons. I feed it with other food—flesh, fish, fowl and farinaceous diet, sugar, vinegar, salt, pepper, oils, saleratus, acids, etc. I witness the welcome of agreeable diet, the sickening effects of poisons. I ply it with unusual captives—frogs, snakes, minnows, tadpoles—and note the arrival of new forces or the adaptation of combined powers to meet the

new conditions. I recognize the tenacity of purpose, the almost intelligent use of means

THOUGHTFUL INQUIRIES.

I have reported these observations so often



DARLINGTONIA CALIFORNICA.

and reverently I humble my spirit before the revelation of infinite wisdom and power.

and fully, that every year brings increasing inquiries from thinkers in distant lands, asking

to have this or that mystery cleared up; or to know if this or that phenomenon is connected with the history of the famous plant. One of the closest questioners is W. M. Canby, of Wilmington, Del. The facts elicited formed the theme of a most exhaustive essay, that was read before the American Academy of Sciences and reprinted in most of the languages of Europe.

"WHY ARE THE LEAVES TWISTED ONE-HALF WAY ROUND?"

Was Canby's last demand. It will be the especial object of this essay to answer this question.

To discuss this subject thoroughly and with the expectation of arriving at the truth, we must begin where the zoologist does with his puzzles—with embryology, the infant state. The seed of the *Darlingtonia* is a brownish, hairy, Indian-club shaped object, about three lines long. It would be a bur, but for the flaccid, hollow, barbless hairs. Thrown out in hundreds by the large, bursting pericarps, they fall upon the running water or mossy carpeting of the bog. A seed here and there is caught by its hair in favorable conditions and sends down a tiny radicle in search of a foundation, whereon to erect a unique charnel-house of many tall, feeding funnels. The precursor of the prospective phalanx of rapacious, cylindrical stomachs, is a very innocent looking little affair.

(To be Continued.)

EDITORIAL NOTES.

LIGHTNING-PROOF BEECH TREES.—We are told that "English authorities claim that Fig Trees and Cedars are rarely struck by lightning; the Beech, Larch, Fir and Chestnut are obnoxious to it; but the trees which attract it most are the Oak, Yew and Lombardy Poplar; hence it follows that the last named are the trees most proper to be placed near a building, since they will act as so many lightning conductors to it. Again, the electric fluid attacks in preference such trees as are verging to decay by reason of age or disease."

No one has yet responded to our inquiry for a Beech stricken, but we will say, in regard to the above paragraph, that a Walnut is not so very far removed from a Chestnut, and on the grounds of Miss Fox, near Germantown, they are so often "struck" as to create the impression that they are favorably disposed to receive the elec-

tric fluid. As to the "Fir," if by this the English authorities mean, as perhaps they do, the Norway Spruce, the writer of this was within twenty feet of the trunk of one once that had its bark peeled off by a stroke. We should not put much faith in the shelter of any tree during a thunder storm.

PINUS PONDEROSA.—The *Gardener's Chronicle* has been giving some sketches of scraggy *Pinus ponderosa*, as seen in the Rocky Mountains, which we can forgive for the sake of the picturesque rocks of Monument Park, which accompany the pictures; but, surely, our good contemporary is mistaken in its statement that it varies much in the Rocky Mountains, and that the string of synonyms has anything to do with such variations. We appreciate that kindness of heart which thus lets down nurserymen's blunders so easily. There is a great difference between the *Pinus ponderosa* of the Rocky Mountains and the form or forms on the Pacific coast; but the *Pinus ponderosa* of the Rocky Mountains is remarkably consistent with itself. But this is what the *Chronicle* says:

"For the accompanying views (figs. 138, 139), representing this tree in its native country, we are indebted to the courtesy of Sir Joseph Hooker, the President of the Royal Society. Sir Joseph met with the species here represented in various parts of the Rocky Mountains, and noted its great variability according to soil and other conditions. The photographs from which our figures were executed were taken in Monument Park, Colorado, under the auspices of the United States Geological Survey, and represent, not only the stunted and contorted tree, but also the curious stratification of the rock: in fig. 139 pillars have been formed capped with a layer of rock of harder texture. The whole forms an admirable example of the erosive power of water, in wearing away the softer layers, and leaving comparatively untouched the harder strata of rock. To the artist, geologist, or physical geographer these views are particularly interesting, while the landscape gardener may derive a few hints as to the formation of rock-work. The lover of coniferous trees may perhaps receive a shock at seeing what his favorites become at an advanced age, and truly many conifers are scraggy-looking objects enough when seen in Pineta or in parks, where their gaunt denuded limbs are not in harmony with the surroundings; but let them be seen in association with bold rocky scenery, as in our

illustrations, and the effect produced is by no means unsatisfactory. We hope shortly to publish some illustrations, from Sir Joseph's pencil, showing the appearance of some of these trees in their native country as observed by him in his recent journey. *Pinus ponderosa* is widely distributed in the Rocky Mountains, and varies considerably in different localities, so that it has received several *aliases*, such as *P. brachyptera*, *P. Beardsleyi*, *P. Engelmanni*, *P. Benthamiana*, *P. Sinclairiana*, *P. Parryana*, &c. A good account of it, with a figure of the leaves and cone, will be found in the fourth volume of the *Journal of the Horticultural Society*, 1849, p. 212, from the pen of Mr. Gordon."

LIGHTNING-RODS.—While on a recent trip to Rochester, we saw a barn that the day before had been consumed by fire from lightning. The gable end was still standing, protected, perhaps, by the "lightning conductor," which still hung from the ruin. Of course it was "defective," but just how and where it was defective it should be as easy to show before a fire takes place as after.

YUCCA BACCATA.—Just why the *Yucca baccata* should be called "Rocky Mountain Banana" it is hard to tell. Perhaps it is for the same reason that we have "Rocky Mountain hats," and Rocky Mountain all sorts of things. At any rate this is what an English friend tells us:

"At a recent meeting of the Linnean Society, Mr. J. R. Jackson exhibited specimens of fruits, leaves and portions of the stem (used as a substitute for soap) illustrating peculiarities of *Yucca baccata*, Torrey. This plant extends from South Colorado far into Mexico. Northwards acaulescent, southwards it develops a trunk ten feet high. The fruit, a dark purple berry, is preserved and eaten as Winter provision, and the plant is commonly known as the Rocky Mountain Banana."

VITALITY OF SEEDS.—Van Tieghem contributes a paper to *L'Annuaire des Sciences Naturelles* on the reason why some seeds retain vitality longer than others. We have not read the original, but give the following abstract from an English source:

"It is a question wholly of the condition of the albumen. In certain oily seeds the albumen changes its character before the plant is ready to germinate, and then the sprouting plant feeds on just what it finds, and which may or may not be nutritious; but in other cases the plant feeds directly on the albuminous matter,

or, in other words, on its endosperm. There are some plants which have no albumen, and these are so constituted that they can get their nourishment directly from the soil. In old albuminous seeds that fail to show, the reason is that the albumen has all or nearly all been chemically changed, and there is nothing left to give the little germ support till it is able to take care of itself." Our contemporary very well adds: "Why ex-albuminous seeds perish is not made clear."

If the pith of the paper be correctly rendered, it seems rather like saying why some seed sprout rather than why they retain their vitality. As some foresters know, seeds may be gathered from trees on one day and some the next, yet some of those seeds will grow at once, some remain in the ground a year, and some not sprout till the third year.

SCRAPS AND QUERIES.

CURIOUS CABBAGE LEAF.—C. B. F., Raleigh, N. C., sends a cabbage leaf. Along the stout midrib of the leaf, a large number of leafy processes, as if small leaf blades have appeared, seeming like smaller leaves growing from the larger one, and giving the rib a pretty fringed appearance. Some of these little leaves branch out into stalks with small heads like Cauliflower points, and, indeed, one can see that with a little more development they would be flowers. It affords a very interesting illustration of the morphological fact, that all the parts of a plant are but modified leaves, for here is a leaf doing all that an ordinary Cabbage stalk or stem could do. The Cauliflower, by-the-way, is from the same wild plant that the Cabbage originally came from. Our correspondent says that nearly all the leaves on the one Cabbage were like to this one.

DOUBLE-LEAF IN A BEGONIA.—W. N. M., Oswego, N. Y., writes: "I enclose you a rough sketch of a strange freak in a *Begonia Rex* (var. *Queen Victoria*). Has the thing ever come under your notice before—two perfect leaves on one stalk?"

Three leaves on the plant, and the central one erect, with two large leaf-blades from the top of the strong leaf-stalk. It looks as if the stalk may have been intended for a flower-stem, and concluded finally, as one might say, to bear twin leaves instead. Some such experiences in plants are not uncommon, and are in accord with well-known morphological laws.

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

PANSY PORTRATURE OR HEARTSEASE PICTURES.

BY WM. T. HARDING, UPPER SANDUSKY, OHIO.

Poor Jeremiah Crocus! was in trouble no doubt. He looked sorely distressed and woe begone! His heart was aching, if not breaking! overwhelmed with misery; his soul was in agony, intense! Deep and audible were the sighs, forced through his compressed lips, as he paced to and fro, by the side of a Heartsease border. Heartsease! forsooth, what a cruel misnomer. Hearts-agony! was the name. The lachrymal floodgates were full to overflowing. Big tears glistened in the corners of his swollen eyes, ready to start on fluvial pilgrimages, down his elongated, and grief-stricken features. Probably, from a natural proneness towards the soil he delved in, his form was downward bent. He seemed sad and dejected, as now and anon, he cast a melancholy glance towards the Pansy bed. And well he might; for there lay the cause of his disquietude and sorrow. The grim tyrant, while remorselessly hurling his death-dealing missiles, had stricken a beloved one; and the pride of the garden, lay dead, by his side! "Well a day! well a day! woe is me, for I am undone! Blast the guano! rank poison, it is!" exclaimed Crocus; in tones more in sorrow, than in anger. "Friend Crocus, what ails thee? good man; why mingle thy grief with profanity? Such language, is most grievous to hear; and ill becomes thee, an old Gardener." Thus, spoke Friend Obadiah Bland, from behind a holly hedge; where he had unwontedly listened to the lamentations of Jeremiah. "Dead, dead as a door nail!" replied the miserable man, in tones dolorous. "Who is dead?" quoth the man in drab; "I pray thee, make known thy distress." Alas! replied the unhappy Crocus, "Captain Cook, is dead and gone! and I shall never, never see his pleasant face again!" Said Obadiah:—"Verily, I fear, though thine heart be right, thy reason is wrong. Captain Cook, dead! thou sayest. Why poor unhappy man! he having ventured far from his home, was unkindly cut off; long ago. The wicked cannibals, on some heathen isle, unjustly slew him with a spear; yea, killed, and eat him! in a very savage, and unbecoming manner,

years gone by." "Pooh!" exclaimed Jeremiah; "nothing of the kind, I do assure you! He was poisoned with a strong dose of guano! That, did the job, for him; yesterday!" Meaning a favorite Pansy of that name, which had been too liberally treated with the new-fangled stuff.

This misadventure occurred soon after the newly discovered Peruvian guano found a market in Great Britain. The merits of the marvelous manure were but then imperfectly known, and often led to mistakes of a mischievous nature when applying it.

The writer remembers the time when pigmy Pansies were highly prized and much admired. Yes, pansies but little better than the diminutive *Viola tricolor*, and *V. arvensis*, growing wild in the woods and fields. They were funny little flowers indeed. Although considered very pretty then, they sadly lacked the form and substance of this day's beauties. Perhaps no flowers have improved more than they. But a few years ago, yellow colors chiefly predominated among them. Their lean, pinched up features, looked starved; not much like the round well-fed comely ones we see now-a-days. Two curious kinds, known as Mr. T. Cat, and Mrs. Mouser, much resembled feline faces; hence the name. The long upper petals stood apart, as like cats ears as they could be, and with eye marks, and pencilled smellers, bore a remarkable likeness to grimalkin's countenance when in a meditative mood.

George the Second had a miserable look in his jaundiced face, while the Chimney Sweep was more renowned for black looks than otherwise. The Merry Monarch seemed to have a twinkle in his eye, as he smiled at pretty Nell Gwyn, one of the fairest-faced beauties of the day. Now Venus had a perfect form, and lovely face, slightly flushed; and so had Fair Rosamond, whose lower lip seemed as if pouting for a kiss. Cinderella's glassy face shone brighter than her slippers. Guy Fawkes, the gunpowder plot man, had a rather undecided phiz, as if smeared with soot and sulphur. Poor Cranmer! looked singed, and sad; while Bonny Lad, was sweet and fair. The Charcoal-burner, was smoky. Golden Fleece, although very bright, was neither woolly nor metallic. Canary Bird had plenty of color, but no song; never warbled a note. White Friar, was as white as

any of the mendicant orders could be; while Gray Friar, was as gray as any monastic man of the order of Franciscans is supposed to be. No Dominican ever had a more sable, sombre, or sad look, than the Black Friar. Rob Roy was rather rough and ragged; his features were weather beaten, and thin. Robin Hood was not much better, as he looked with green-eyed jealousy on Little John; with Maid Marian by his side. The Exile of Erin looked none the worse for expatriation, as he cheerfully gazed on the scene. Dick Turpin, "a gentleman of the road," had a sinister and saffron face. George Barnwell looked rakish and unreliable at the frail, though fair featured Millwood. King Richard was purple with rage; Bosworth field was too much for him. Linnæus was sad and seedy. His yellow lip hung listlessly; a wretched caricature of the mild mannered man. Sir Roger de Coverly looked rather roguish, and flushed; while Gipsy Jane, black eyed, dark complexioned, and beautiful, seemed a fit companion for the rollicking Roger. Dr. Jenner was of uncertain color, much like a man with the measles—or small-pox. The Miller of Mansfield was the color of a flour bag; not very white. Bacchus either had the blues, or the blues had him; for that was his color, as near as blue could be. Polly Hopkins had a pretty face; for a beautiful blonde was she. Pale-faced Hope looked steadfastly upwards. Cleopatra, queen like, wore the royal purple; while the Grand Turk, wore a white turban. Shylock had a wicked miserly cast of features, of a parchment hue. Giles Scroggins looked ghastly pale at the Phantom's waxy form. Judith was a sweet brunette. Black-eyed Susan like Lesbia, hath "a beaming eye," and a face that is fashioned to love.

There is something in a name, and our flowery fathers knew it, "and governed themselves accordingly." They certainly evinced an aptitude for characteristic nomenclature. For instance; the markings of Black-eyed Susan resembled eyes of that color; and were as fatal, when flashing as were, those of Kate Kearney. Golden Fleece was a yellow flower; and the Carmelite Friar was white, &c.

When the writer was a young lad, Pansies were mostly of the Angular type, somewhat scraggy. Not much like the improved varieties before him now, with faces "as round as a ring." Some look comely, grave, jolly, smiling, saucy, jovial, pensive, and cheerful; all facial expressions, a

physiognomist would readily recognize. To quote the language of Chesterfield, they are "a symmetrical assemblage of beautiful faces."

The untimely death of Captain Cook, the favorite flower of honest old Crocus—whose death "he lamented right sore;" was almost copper colored. Just such a sunburnt hue, as the old navigator would be likely to get, while sailing around the sunny Isles of the sea. The decided cast of features had a singular pensive expression; such as would naturally become such a man. Although but half the size of the kinds now in cultivation, it was a pretty little well-shaped flower; one of Viola's choicest gems.

Since that time "a change came o'er the spirit of my dream" of floricultural perfection: "The changer of all things, yet immutable," has through the aid of man, worked wonders in the laboratory of Nature; and in the wide fields of Horticulture, Agriculture, Arboriculture, and Floriculture, "hath done marvelous things."

As the march of time has gone forward, so has the march of intelligence kept pace, with good gardening at the front. The fertile soil, ever bountiful, has yielded a rich harvest of beautiful flowers, little thought of by the Florists of other days.

Lovely Heartsease flowers measuring two and a half inches across, are not uncommon on the borders, where but a few years ago blooms of less than one inch were seen. Let me remind the reader this is no fancy sketch of the writer, who, while he holds up the mirror to Nature, throws on the canvas, pleasant pictures of posies passed by. In those days there was "Gardening for Profit," as well as "Gardening for Pleasure," and poor old Crocus knew there was "Money in the Garden;" he dug for it, and found it, as all industrious diggers do;—though in his case I fear but little turned up for him.

Heartsease! good readers all desire and all deserve; and though often sought for, is but seldom found. It seems as illusive as the Hibernian's flea, who, "every time he put his thumb on the little baste, it was gone." But not so, with the Heartsease I offer you, it will continue for an indefinite period. "It may be for years, or it may be for ever," if only well cared for.

Most seedsmen advertise Pansy, or Heartsease seed, of the best strain in variety, which is a cheap way of getting a stock. The Nurserymen and Florists have for sale good sized plants, ready to bloom, and true to name, at reasonable rates. If the amateur elects to

raise them from seed, let him prepare a bed of good friable loam, made rich with a liberal quantity of decayed cow manure, (well rotted horse manure, from an old hot bed, makes a good substitute) dig deep, and thoroughly pulverize, smooth off with the rake, and sow on the surface. Cover the seed *very slightly*, water through a fine rose pot, and they will soon germinate. I always prefer sowing in a cold frame, either in Spring or Autumn, as they are easily sheltered during storms, or shaded if too hot. Free ventilation is given as soon as the seedlings are seen, and they are picked out when big enough to handle.

It is better to transplant the Spring seedlings where they are wanted to bloom, through the late Summer, and Fall months. It is advisable to pick off all the flower buds through the early season, and the plants will grow more stocky, and will bloom amazingly, until checked by frost and snow. A good plan is to measure the hot-bed frames, and plant in rows from six to eight inches apart, and before wintry weather comes on, place the spare frames over the bed, and if kept from freezing, they will continue to bloom without ceasing until spring time comes again.

Those left outside, protect with a few beech or oak leaves, nicely scattered among the plants; and with a branch or two thrown on, to prevent the wind from blowing away, they will often weather the storms, if not too much tempest-tossed. August sown seed may be treated in like manner, and they will flower freely from early Spring until scorched with the hot Summer's sun.

Very few plants will flower at so low a temperature as the *Violas*. If potted or planted in boxes, and placed near the glass in a cool part of the greenhouse, they will well reward the cultivator for his pains. They may be increased by division of roots, or multiplied by cuttings, as they strike very freely. There is no mystery about the management of the very companionable Pansy. It is really a good-natured plant, one of the kind we most of us fall in love with at once. Neither is it to be wondered at, when their soft, candid, sweet faces look as pretty as possible, while modestly peeping at you.

As the writer began the subject with the octogenarian Florist, it seem but proper it should end with him. In "the sere and yellow leaf," well wearied with years, he finally put by his

pruning knife and spade; his work was done, and well done. With a tender regard, he took a last fond look at the flower beds he had so long and lovingly tended; bid adieu to the living, and joined the dead. The indirect cause of his dissolution, was *ulcerated tubers*: I mean the potatoe disease or murrain of 1847, so dire in its consequences throughout the country, especially among the poor people, so distressed his mind, and excited his commiseration for the sufferers, as to seriously effect his good and sympathetic heart, and bring its kind and generous pulsation to a close.

EDITORIAL NOTES.

TRAVELING NOTES BY THE EDITOR.—The writer took "a few hours to himself," recently, by a trip to Rochester to visit the Nurserymen's Convention, and we can say that it feels good to be once in awhile "out of office," and to be not an editor, but a mere nurseryman—one among many, like the rest of the folks. People often wonder how so much can be done now-a-days, as compared with what our fathers did; but in truth, the conveniences at our command are so much greater that it would be to our shame if we made no additional use of them. So, long after the sun went down, the steam cars take the writer twelve miles: he presides at a meeting; the meeting closes, and again the cars take him to the Pennsylvania Railroad depot, where the Pullman car is in waiting, and where he goes pleasantly to sleep. But the car does not go on its journey till midnight, and the sound sleeper knows nothing till the porter wakes him to know if he desires breakfast at Williamsport, and by telegraph the breakfast is ordered, and just ready to order when Williamsport is reached. I mention this little matter here for two reasons: first, because it shows how easy it is to do a great deal of work as compared with old times, and, secondly, because I am conscious that this letter is following some European sketches, and I cannot but feel the immense advantages we, in this country, enjoy in comforts and facilities over the people of the Old World. I do not know that the average duration of life in our country shows a less figure than Europe shows, but our facilities for doing things easily are so much more freely scattered amongst the multitude, that an average American lives double as long as an European does, if what he can see and know in his life, be the measure thereof; and it

is, perhaps, the consciousness of this fact, which in the pride of that knowledge makes so many Americans over-do their work, and become so much the slave to their occupation, that in another sense they do not live at all.

Having breakfasted at Williamsport, I took notes of my fellow-travelers. Here are the usual set, who "took the Northern Central route to enjoy the magnificent scenery, you know," busily engaged in a discussion about public affairs at Washington, and for all the beauty, might as well have been blind. I should not like to have to be a witness before their friends as to how much beauty they saw! Then there was the novel reader, the devourer of the police news, the regular daily paper scanner, the usual proportion of pillowed heads, and the inevitable couple just on a bridal tour, and whom I always forgive for not finding anything more lovely and beautiful outside of the Pullman coach than they can see within.

But the book I love to read, when I travel, is not in any library, so I eagerly scan its broad pages while I may.

How strange is the waking up in the morning among these cloud-capped hills! Down where I live, near the level of the sea, the Spring violets had scarcely gone; but here the Golden Rod, the special favorites of Autumn, were already in blossom. Summer was, however, still lingering as we could see by the gorgeous masses of "Wood Laurel," *Kalmia latifolia*, which, by-the-way, are only "Wood" Laurels. At places lower down, the little seeds, fine as dust, would never make a successful sprout in the open ground of a sunny plain, so they have to take to the woods to get even a taste of the pleasures of life; but here in the mountain mists they take to the naked exposed rocks and open places, and those who have seen them only in the shelter of some friendly wood can have no idea of their magnificence as seen up here. I shall never forget the impression made on me once in the past, when awakening from my bed of branches in a deep cleft on a high mountain, I saw the rising sun reflected from a snow-cap in the long distance. I have seen nothing since that recalled this pleasure so vividly as these *Kalmia*-covered mountain tops, with their rosy morning hue. Then here and there were bushes of the Red-berried Elder, with fruit as if made into bunches out of Red Currants, and the beautiful flowering bramble, *Rubus odoratus*, and many other handsome native flowers, which if I were writing now as

an editor, and was answering the question why these pretty things are not in our pretty gardens, I should have to say "we do not know."

And there are pretty gardens among these hills too. I was particularly struck on this little trip, more so than I was ever before, that the houses of our farmers, and the surroundings of the poorer classes, are not so florally destitute as we have been in the habit of regarding them. Over and over again have I heard the great admiration expressed for the Roses and Honey-suckles of English cottages, and the regret that our own are not like them. But they are; and a ride over the Northern Central will prove it. I cannot say that the walls of the buildings are covered, as the Europeans are. The dwellings are not as nicely embowered in blooming foliage, nor are the window-sills filled with pot plants from ground-floor to attic—our climate is scarcely suited to this sort of thing—but the hardy garden flowers, and more especially the care for fruit trees and trees for shade, and shrubs for flowers, were fully as wisely planted around these humble dwellings as they are elsewhere. Was it always so in these wild, out-of-the-way parts of our country? I think not. I believe it is a progressive growth, and I could not but think the much-abused "tree peddler" had some hand in this progress. He has his black sheep in the flock—and we strongly suspect in his dealings with customers he is not much better than other men—but there can be no denying that he has carried a love for tree-planting, and a taste for flowers into many a hundred out-of-the-way places that the ordinary stream of trade would have never reached. The fruits especially were a sight to see; the cherries particularly. I never saw trees so loaded, and strikingly so in the vicinity of Elmira.

But I must say a few words of Rochester. The Nurserymen's Meeting is of the National Organization which meets once a year to discuss matters of interest to the business. It was a surprise to me to find so many of the best men in the trade there. What might be regarded as "crooked sticks" were extremely scarce among them; and the whole discussion turned on how the public might be protected against fraud, and how all that is right and proper as between the buyer and seller should be advanced. Of course they wanted to know how to make money out of their trade; but I never met a body of men where the desire that the great public should get the full worth of all they bought was so

pointedly kept in mind. The Rochester Nurserymen behaved very handsomely, and no trouble or expense seemed to be too much to make their visitors remember the week. Points of Horticultural interest were visited, and we had a good chance to see how the people enjoyed Horticulture, and in what condition was the nursery trade. As I could only spare a few hours there, I had not the chance to see all the others saw; but I looked through the nurseries of Gould Brothers, and found them largely engaged in Rose culture, besides the usual items of a general nursery stock. A beautiful grove of natural timber, just before their "cottage door," makes a call there particularly attractive to the lover of cool breezes, on a hot Summer's day.

Mr. Little's nursery struck me as being particularly rich in ornamental trees and shrubs. Whitney's Tree Digger, a machine for taking up, entire, large trees, was tried for our benefit, on some six-foot Balsam Firs, and ten-year old Maples. It would have been no defeat if Whitney had been overcome in such a test as this, but the machine went right through.

Mr. Hooker's nurseries are strong in specialties. He is working up the Early Dawn Grape, which pleased so many last year at Baltimore. His connection with the Brighton Grape is also well-known. He also has extensive trial-grounds of Gooseberries, and is working up great quantities of some of the most approved kinds. The grafted Gooseberries and Currants which was so attractive at the Centennial Exhibition, were also growing here; and besides this there was the usual variety of nursery stock.

Mr. Vick's grounds abounded with flowers. I never saw so many pansies in one lot together, and scores of hands were collecting the seeds.

Ellwanger & Barry's grounds always charm, by the "Specimen" and "Home-grounds," which are so highly kept, and very instructive. The lawn is beautiful; and a story is told of one of the visitors who shook the ashes, and finally the stump of his cigar into his hat, rather than soil the elegant green carpet he was walking on. An excellent tribute to Western good manners! for I have not always found smokers as careful of a real good carpet as my friend was of this beautiful lawn. E. & B's strong point seemed to me to be in fruit trees. *Hundreds* of acres of these were in capital condition, the Pears especially so.

Of the private grounds, Mr. Ellwanger's is charming. I never saw a small place more

beautifully designed, and the design more capably executed. It would not do to say that a good landscape gardener was spoiled to make a nurseryman, for Mr. E.'s success in the one has been as great as in the other.

The love of flowers, trees, grass, &c., is very general about Rochester, but, perhaps the misfortune of my hasty run, I saw no remarkable garden designs. I should judge there are but few such specimens of true garden *art*, as is seen at Mr. Ellwanger's. But the evident general love of being "nice" in the floral way, is a good foundation to build real garden art upon.

And the people are quite liberal with their gardens. I was shown, by the kindness Mr. W. C. Barry, through many private grounds of from five to twenty acres, which were freely open to all well-conducted persons. Indeed this community of garden pleasures is a marked feature of Rochester. The houses are mostly set back from the street, and there being no fences, the lawns run down to the side-walks. I cannot say that I admire the plan. The generosity which makes one's grounds aid in the general beauty of a city is highly creditable to public spirit; but our idea of a garden is something to retire into, and enjoy in quiet contemplation; and to have instead all this in the full public glare, where you cannot even cut a rose bud, have a quiet game of croquet, or even sit in a hammock and swing with your wife or sweetheart, without being a target for public gaze, is not our idea of a garden, whatever it may be of a public park. Those who carefully exclude every vestige of their inner life from the public in their garden work, are not to my taste either; but then there is a great difference between this and showing everything for nothing.

VIRGINIAN JASMINE.—Under this name, La Fontaine, an elegant French writer, refers to a climbing plant, which has "rosy flowers of the form of a fox-glove," and in which flowers a beautiful insect is born with their blossoming, the insect at once dying on their decay. Can any of our readers say what plant is referred to under this name, and what foundation there may be for the entomological part of the story? Another French author refers to the "Persian Jasmine uniting with the Virginian to cover our arbors and embellish our groves."

AMERICAN AND HARDY FERNS.—In connection with the remarks made in our magazine recently on the growing fondness of American

ladies for hardy Fern gardens, it is pleasant to observe a growing taste for this country. Mr. J. Warren Merrill, of Cambridgeport, Mass., has felt warranted, in consequence of the increased demand for them, in making a special business of growing them for sale.

FERNS OF KENTUCKY.—by John Williamson, of Louisville, Kentucky. Price \$2. This prettily printed and profusely illustrated little work should have an extensive sale, as the ferns of Kentucky are in a great measure the ferns of other sections of the Union. This work treats of fifty-five species or marked varieties, and many of them figured with microscopic details enlarged so as to make the structure very plain to the observer. The cosmopolitan reader, is well cared for, as in a very plain manner the whole subject of ferns is treated. "Ferns of Kentucky" does not tell the whole truth in its title. It is, indeed, an excellent treatise on ferns, and no one who loves ferns and can spare \$2, but will be gratified by the possession of the little book.

MOORE'S RURAL LIFE.—A circular before us announces a new agricultural paper, by Mr. D. D. T. Moore, founder, and for twenty-five years so favorably known in connection with the *Rural New Yorker*. It is to be called *Moore's Rural Life*.

DEATH OF JAMES FLEMING.—This well-known Seedsman of New York, died at New Canaan, Conn., on July 10th. Mr. Fleming was born in Ayrshire, Scotland, in 1833, and was consequently forty-five years of age. He was an excellent type of the best class of Scotch Gardeners, an educated, intelligent man, thoroughly versed, not only in the varied details of all the branches of Horticulture, but was besides an excellent botanist; but his character was so innately modest, unassuming and unpretentious, that only his most intimate friends were aware of his varied acquirements. Mr. Fleming was a resident in and about New York for the past twenty years. For some five years he had charge of the fine collection of Orchids and other plants of Mayor Van Vorst of Jersey City, N. J., which some fifteen years ago was one of the finest in the country. From there he started the Seed business in New York City, in partnership with Wm. J. Davidson; subsequently Mr. Davidson sold out his interest to Peter Henderson and for five years the firm of Henderson & Fleming did a large business, particularly with private gardeners with whom Mr. Fleming was a special

favorite, as he never failed to use his influence to help them to new positions—or encourage them with hopeful words and sound advice when he could do no more. The firm of Henderson & Fleming was dissolved in 1872, and Mr. Fleming continued the business alone until six months ago, when failing health, and other causes, induced him to retire from active life to his Connecticut farm, where death came far sooner than his many friends expected. Few men of his age were better known to the gardeners of New York than James Fleming, and certainly none were more beloved. Open-handed, open-hearted, genial and hearty always, he will long be remembered by scores of poor fellows into whose plodding lives he threw many a gleam of sunshine. Few men die to whom the grand words of Fitzgreene Halleck are more appropriate than to James Fleming:—

"Green be the turf above thee,
Friend of my early days,
None knew thee, but to love thee;
None named thee but to praise," X.

PROFESSOR ASA GRAY.—The Washington correspondent of the Cincinnati *Commercial*, referring to Prof. Henry's funeral, gives the following sketch of Prof. Asa Gray: "The Professor's head is bowed, not by age, but because he has so long looked down in the faces of the tiny flowers; his countenance reflects only the delicacy and purity of the wild birds, with their fresh flush and modest glow." Professor Asa Gray is a native of Oneida County, N. Y.

SCRAPS AND QUERIES.

FUCHSIA.—H. E. N., "Please give in the GARDENER'S MONTHLY the proper pronunciation of Fuchsia."

[Fu-she-ah,—but as the accent is on the first syllable, to the ear it will sound almost like Few-shah.—Ed. G. M.]

GERANIUM AND PELARGONIUM.—Memphis asks: "Can you tell what is the class now called Geranium, and what is the Pelargonium? They seem now much mixed. Many years ago all were Geraniums—Horse Shoe, one type, and the other the Geranium proper with the blotch in the upper petal—these got to be "Pelargoniums," and now they have got so that although I know what I want, I know not by what name to order. Again, if you order Pansies and you get Violas; how is that?"

[It is difficult to answer our friend's question. The trouble comes from a class of well mean-

ing people who want to get things just right, and yet do not perceive that an English word is not a Latin word, and that a botanical word need not necessarily be a word for every day life. So they discovered that when we had been saying *Verbenas* and *Dahlias*, *Gladioluses* and *Cactuses*, we were very wrong indeed, and must say *Verbenæ*, *Dahlisæ*, *Gladioli*, and *Cacti*, as if we were talking in Latin and not in English. The most common sense view seems to us to be that when we have no word we want in the English language, and have to coin one from a foreign language, that adopted word should follow English grammatical rules.

The same trouble came in this *Geranium* matter. There is a botanical genus *Pelargonium*, and one *Geranium*, and besides this *Geranium* became an English word to represent an English idea, and in common use with English-speaking people. But botanists concluded that certain plants which they supposed *Geraniums* were properly *Pelargoniums*. It was right to change the botanical name with the newly discovered facts, but there is no reason that we can understand why the English name should be changed also. Like our correspondent, we are often puzzled when reading English Horticultural literature to know what they are talking about when they get on "*Pelargonium*."]

EUROPEAN SKETCHES.—Mr. W. T. Harding, "Oak Hill Cemetery," Upper Sandusky, Ohio, writes: "All things and events must at some time, sooner or later, come to an end; and in some cases, regretfully so. Even the very pleasant "European Notes, by the Editor," are no exception, as he seems to hint in the July number of the MONTHLY.

As a reader of that much loved magazine, I can no longer refrain from testifying to the merits of the exceedingly interesting "Notes," which flowed so graphically from his facile pen. How familiar, to the mind's eye, of his corres-

pondent, are many of the scenes, so faithfully pictured. And how "the harp of a thousand strings," brings back to memory soft notes of olden times, when the master hand strikes the chords which awaken recollections of days gone by. And your pen, dear friend, was the plectrum which often moved one to tears, as I followed your footsteps listening to, and recognizing the minstrel, so skilled in the lays of floral song. Your "Notes" gave no uncertain sounds; but were positively charming, instructive, entertaining, piquant, and prosy. Often sentimental and pathetic; sometimes funny and amusing, all times intelligent, practical and edifying. Rest assured, your readers have been benefited thereby, and if they make no remarks, their "silence gives consent" for "more anon." That you are not "trespassing on the reader's good nature," I can vouch, and frankly admit that I am one "who wants to hear stories a year old." To quote the quaint diction of ancient Pepsy, they are 'mighty pleasant' reading."

PRESERVING FLOWERS OF THE NIGHT BLOOMING CEREUS.—Geo. G. B., St. Joseph, Mo., writes: "I have tried to preserve a flower of *Cereus grandiflorus* in alcohol diluted with an equal quantity of water; but the result did not prove satisfactory. The bloom dissolved somewhat, turned into a bad yellow color. Could you inform me of a better recipe, how to keep this beautiful ephemeral flower? I would feel many times obliged. I was very glad to read your instructive traveling observations, of Paris, as of said places I am very familiar. I hope we shall hear more from you about the *Jardin des Plantes*, etc. I am not aware whether you saw the splendid Park of *Maison-sur-Seine*, on the railroad line to Rouen, which is considered one of the prettiest places around Paris."

[Perhaps the alcohol was not as good as it should be; for usually the flowers keep very well.—ED. G. M.]

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

CENTENNIAL EXHIBITION OF 1876, (Continued from page 223).—In tracing the progress of Apple-culture through the century, as exemplified by the exhibits, the most surprising suggestion is the

increase in the number of varieties, which has made a selection of local lists, suited to the most diverse conditions of our great country, a possibility. At the nation's birth we had but about a hundred varieties, and now we have over two thousand. Even in the time of Cox, one

of our earliest writers on fruits, less than one hundred and fifty kinds were known to be under cultivation. It is interesting to note that the kinds that were popular in the beginning still hold their own. Only a few, like Pennock, Hays, Newtown Pippin, and Spitzenburg have given away somewhat before others. The most popular fruits in the early part of the era were Porter, Red Astrachan, Williams' Favorite, Fameuse, Gravenstein, Baldwin, Bellefleur, Maiden's Blush, Jonathan, Lady, Rhode Island Greening, Swaar, Summer Queen, Roxbury Russet, Seek-no-Further, Gilly-flower, Lowell, and Tallman's Sweet, and these are popular to-day. In the new varieties since raised we have gained over these in special points, but it is doubtful whether a better list, on the whole, for general culture on this continent could be made up. The most remarkable progress in the Apple class has been in the improvement of Russian varieties, and the Siberian Crabs. The last were only garden ornaments a hundred years ago, and confined to two or three small-fruited forms. There are now probably a hundred varieties, some of them as large as the old popular garden sorts, and in some cases with a flavor little inferior to the best of them. These improvements have been made chiefly in Minnesota, and other of our high Northern States, and in the Dominion of Canada. The hardness of the Siberian Crab gave encouragement to the experimenters in these severe winter climates; but even with these inducements the progress has been wonderful. Some few specimens of the highly-perfumed American native Crab (*Pyrus coronaria*) were exhibited, but there appeared to have been no attempts made to improve it, either by selected cultivated seedlings or by watching for variations among wild plants.

Vast progress has been made in Apple-culture by the endeavors to correct the nomenclature. In so vast a number of varieties it was found extremely difficult to establish any authoritative guide. The formation of the American Pomological Society grew out of this want. In this respect the Centennial Exhibition has shown how well we were advancing in this department by the collection of models in wax of leading kinds made by Colonel G. B. Brackett for the Iowa State Horticultural Society; so perfect were these models as to be taken for the Apples of the genuine varieties even by experts.

Progress in Pear-culture has been much more rapid than in the Apple. A large number that

were grown at the Revolution are not known by any one now, and the few that survive are mostly supplanted by better kinds. The most popular varieties then were Jargonelle, Windsor, Autumn Bergamot, Rousselett, Crassanne, Brown Beurre, St. Germain, Gansell's Bergamot, Green Chissell, Winter Nelis, White Doyenne, Catharine, and Easter Beurre. The Vicar of Winkfield was being introduced; but the Bartlett, Seckel, and Duchesse d'Anjouleme had not been born. Now, on our tables we had no less than three hundred varieties from the Hon. Marshall P. Wilder, of Boston, besides numerous collections from other growers—and many scores of varieties exist superior in many respects to the best of those named as being popular in the days of the Revolution. Most of the improvements have been made by the selection from accidental seedlings coming up naturally from chance-sown seed; but a few have set to work to raise new kinds by artificial means. One of these, Mr. J. Clapp, of Dorchester, Massachusetts, exhibited a large number of deserving kinds. One of his seedlings, the Favorite, has taken a front rank among the popular varieties. Among the possibilities of further improvement, must be mentioned the hybrid Chinese Sand Pears of Mr. Peter Kieffer, of Philadelphia. This kind has been valued solely as an ornament on tasteful grounds, and somewhat for the pleasant perfume of the fruit. Mr. Kieffer's seedlings retain this delightful fragrance, and have, besides, the beauty and delicious flavor of a Bartlett or Flemish beauty—two of the most popular varieties in American orchards.

The Pear, like the Apple, has shown by the Exhibition how wide is the extent of territory in which it may be successfully cultivated. There were numerous exhibitors from Canada, Maine, New Hampshire, Connecticut, Delaware, Maryland, and Pennsylvania; the District of Columbia had one exhibitor in the person of Mr. John Saul, and the State of New York was represented by an admirable collection from Messrs. Ellwanger & Barry, of Rochester. Ohio, Michigan, Indiana, and Wisconsin all had excellent Pears from various exhibitors; Oregon had numerous varieties of superb fruit, superior in color, size, and flavor; and on the California fruit table some large specimens were for sale. The results of the Exhibition show that the Pear may be grown successfully over most of the United States.

The number of excellent wild Grapes early

attracted the attention of the settler from foreign lands, and so early as 1686 William Penn had a vineyard on the Schuylkill River, on a spot almost within the Centennial grounds. But the superiority of the foreign varieties tempted their introduction to the neglect of the improvement of the native kinds. At the opening of our Centennial era these foreign varieties had proved general failures, and attention was given to the kinds to be found everywhere in the woods at home. The gardener to one of the Penns, a Mr. Alexander, discovered a very good kind, with rather large berries and fair flavor, even for our time, which was named after him, and this was probably the only good native Grape in cultivation when the New Republic was born. Soon after, the Isabella was found in South Carolina, the Catawba in Maryland, and the Bland probably in Virginia, and the societies for the improvement of the Grape and Grape-culture came into existence, in one of which, even before the year 1800, we find the celebrated Henry Clay an active member.

In 1827 the Susquehanna made its appearance; but it is only within the last quarter of a century that the native Grape has been improved to any great extent. Then the Concord, the Delaware, and the Hartford Prolific showed how much was possible. All such efforts as those of Penn, Peter Legeaux, the Salem (North Carolina) colony, the Princes, father and son, and Nicholas Longworth with the foreign Grapes were abandoned, and attention concentrated on our native kinds. Among the number that were known forty years ago most have been so wholly superseded by improvements that their names are now nearly all unknown to the general Grape-grower, and only occasional bunches of the following were seen on our tables: Elsenburg, Norton's Virginia, Isabella, and Catawba. The Grapes most frequently found on the Centennial Exhibition tables, and indicating a widespread popularity, were Concord, Clinton, Delaware, Salem, and Diana. It would by no means be safe to say that these were the best Grapes for the regions in which they were grown, for often others would be exhibited from the same places indicating points of superiority, but which from some cause had not become so well known. Of the exhibitors who have done much to improve the native Grape, and who showed their excellent products, the names of Ricketts, of Newberg, New York; Campbell, of Delaware, Ohio; Arnold,

of Paris, Canada; Mills, of Hamilton, Canada; and Broadfield, of Ada, Michigan, are conspicuous. The value of Ricketts' labors can hardly be estimated. His improvements have been so great, and presented in so many forms, that those who longed for foreign Grapes to cultivate in America find nothing now to desire. His efforts have been made in two distinct lines, —the improvement of the native Grapes for table use by hybridizing with the foreign, and their advancement, by seedlings or native crosses, for wine-making. In California the foreign Grapes grow well; none of the native improvements were exhibited from there, but fair Muscats and Tokays were offered for sale on the Centennial grounds.

Among the earliest Grapes on the tables were the Concords, from the German settlement at Egg Harbor City, New Jersey; and Delawares, from Henry M. Engle, of Marietta, Pennsylvania; and it is a remarkable fact that these early fruits were so fine as not to be excelled by any that came before us of the same varieties at any later time. The last Grapes that were exhibited came from Canada and the northern part of Michigan, and though not equal in flavor to the southern products, were remarkable for size, color, and other good properties. It was indeed one of the surprises of the Centennial Exhibition to learn that Grapes should do so well so far north. In Europe it has been conceded that the Grape will not ripen north of latitude 50°, yet notwithstanding the peculiar influences supposed to modify the temperature of that region, we find them to ripen quite as well in the same latitude on this continent. Another interesting fact brought out by our Exhibition is that the foreign Grape is a total failure only in the southern portion of the North American continent. As we get towards Canada some foreign varieties do tolerable well, and in Canada they do nearly as well as the native kinds, merely requiring winter protection by laying down the canes and covering with earth. So far as the results of the Exhibition are concerned they seem to show that the whole northern belt of our States, as also Canada, is very favorable to Grape-culture. Admirable exhibits came from Maine, Massachusetts, Connecticut, New York, Pennsylvania, New Jersey, Ohio, Indiana, and Michigan. The *Phylloxera*, the great scourge of the European vineyards, has proved no serious obstacle to American Grape-culture, and there are, probably, few matters of

which the Exhibition may be more proud than its demonstration of what America has done for Grape-improvement within the century.

(To be Continued.)

THE MONTGOMERY (OHIO,) HORTICULTURAL SOCIETY, seems as prosperous as ever, and is at least as useful if not more so. We always read its proceedings with interest. Here is a bit of insect talk that has some useful hints in it: "The chair announced the subject for discussion to be 'Birds and Insects,' and requested Mrs. W. D. Bickham to favor the society with her method of ridding her Rose bushes of the slug, as it was understood she had been successful. Mrs. Bickham said all she did was simply to make strong whale oil soap suds, and persevere in the application of it to her Rose bushes every evening for about a week. Mr. Broadwell said he succeeds with common soap suds. The main point is to commence in time and persevere in its use. A member remarked that White Hellebore, in the form of powder, was used by many with entire success, but that some care ought to be observed in its use, as the remedy was not entirely free from objection. Judge Frank said White Hellebore is not a poison, as many suppose, and its use is not attended with danger. He used it with success upon his Rose bushes, and also rids his Gooseberry bushes of a very troublesome pest with it. Mr. Barney said he has known it to be used successfully dissolved in water. Judge Frank said it would answer the purpose very well to apply it in that form. Mr. Ohmer said that hitherto members of his family had had much trouble in keeping the various plants in the house clear of insects. Last fall the tree frog was introduced among them, and much to his gratification he finds his plants entirely free from these pests. The member of the reptilian kingdom thus introduced deserves and receives the entire credit for the improved state of affairs.

KENTUCKY HORTICULTURAL SOCIETY.—Reports for 1877-78: This does not appear to be strong in members, but is doing good work. Besides much that is interesting to Horticulturists in every branch of the art of gardening, the Strawberry as it should be grown in Kentucky, receives particular attention.

THE DISTRICT OF COLUMBIA HORTICULTURAL SOCIETY, was recently organized, Wm. Saunders, occupying the Chair, and J. T. C. Clark, acting as Secretary of the meeting; John

A. Baker, President; John Saul, Thos. W. Fowler and Edwin Cammack, Vice Presidents; C. A. Ball, Recording Secretary; B. S. Curtiss, Corresponding Secretary; J. T. C. Clark, Treasurer; Ex-Com., John Saul, D. J. Saunders, Geo. Glorius, Michel Esch and J. S. Judd, with the President, Secretaries and Treasurer, as *ex-officio* members of the Committee; Wm. Saunders, Mat. Hagerty, J. K. Kerr, elected a Committee on Finance.

MASS. AGRICULTURAL CLUB.—Cheever Newhall, lately deceased, was annually elected chairman of this body for thirty-eight successive years. Col. Wilder has been elected to succeed him. It is wonderful how much Mr. Wilder does. His speech on the recent annual dinner at the club, was as full of vigor as those he delivered fifty years ago.

TEXAS HORTICULTURAL AND POMOLOGICAL ASSOCIATION.—The schedule for 1878, says: "The objects of this incorporation are: the advancement of the science of Horticulture and Pomology, rural adornment and landscape gardening; to encourage the growth and culture of plants, shrubs, trees, fruits and vegetables; to facilitate the introduction of the same in Texas; to increase and facilitate the transportation and sale of fruits; to encourage the establishment of nurseries, hot-houses, vineyards, gardens and fruit orchards of every kind, and generally to promote the development of the Horticultural and Pomological resources of the State."

An excellent feature is the provision for establishing local Societies, in connection with the one central body, and which we have heretofore suggested to the older societies in other States. Of this, it says: "To the Vice Presidents in the various Senatorial Districts is assigned the duty of organizing co-operative branches of this Association, at such points in their respective Districts as may be deemed most advisable, appointing an Executive Committee therefrom, and a Secretary, who shall collect specimens of all soils, with all statistical information in relation to either or all of them, and forward the same to the Secretary of the Texas Horticultural and Pomological Association, at Houston; the specimens to be placed on permanent exhibition in the Museum, and the statistics to be filed for reference and publication." The officers are, President, A. B. Small, Houston; Vice President, Wm. Watson, Brenham; Secretary, Geo. Kidd, Houston; Treasurer, Robert Brewster, Houston.

THE
GARDENER'S MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

Vol. XX.

SEPTEMBER, 1878.

Number 237.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

In many parts of the Northern States the leaves will have changed color previous to the incoming of Winter, and the planting of trees and shrubs will commence as soon as the first Fall showers shall have cooled the atmosphere and moistened the soil. Further south, where the season will still remain "Summer" a while longer, the soil may, at any rate, be prepared, that all may be in readiness when the right season does come. What leaves remain on should be stripped off, and the main shoots shortened. They will then do better than if planted very late. The roots of plants grow all Winter, and a plant set out in the Fall has the advantage over Spring set trees, that its roots in Spring are in a position to supply the tree at once with food. This is, indeed, the theory fall planters rely on; but in practice it is found that severe cold dries up the wood, and the frosts draw out the roots, and thus more than counterbalance any advantage from the pushing of new roots. Very small plants are, therefore, best left till Spring for their final planting. It is, however, an excellent plan to get young things on hand in Fall, and bury them *entirely with earth*, until wanted in Spring. Such things make a stronger growth the next season, than if just dug before transplanting.

All successful planting really depends on how soon the mutilated roots can draw in moisture to supply the waste of evaporation, hence if a tree has been badly dug and has few roots or the roots appear dry or weak, lessen the demand

on them for moisture by cutting away some of the branches. In this cutting take the weak branches, and not the strong and most vital ones, as are often stupidly sacrificed, and above all see that the earth is tightly packed about the roots, for, unless the earth is in actual contact with each rootlet the work is not perfectly done. If there is a rootlet which even by a hair's breadth does not touch the earth, that rootlet might as well not be there.

American gardening will in time come to be peculiarly characterized by grouping of shrubs and trees instead of the absurd copying of European flower beds not adapted to our wants or climate. Studies for such work will be particularly in order now as the leaves are changing their Summer green.

COMMUNICATIONS.

PICTURESQUE LAWNS.

BY S. B. PARSONS, FLUSHING, N. Y.

(Continued from page 229.)

A group of Magnolias includes *acuminata*, fifty feet high, *macrophylla*, with its superb flowers, twenty-five feet high, *Soulangeana*, *glauca*, *longifolia*, *gracilis*, and others. Near them stands a Tulip Tree with its straight column seventy feet high. Another light Atlas Cedar stands by a dark Austrian Pine. Apple trees, fifty years old, in full bloom, are brought out against the darkness of a mass of Norway Spruce. German and African Tamarisk contrast well, as do the Horizontal Yew and Golden Retinospora. *Magnolia cordata*, *Picea grandis*

and Weeping Larch, standing together, have each its different shade. At the foot of the Purple Beech lies a prostrate Juniper, trained to a height of eight feet and then allowed to fall upon the ground. *Abies polita*, Weeping Silver Fir, Weeping Spruce and Japan Yew form a picturesque group. The light and drooping Silver Linden, thirty-five feet high, is flanked by an Atlas Cedar of darker shade, which in its turn contrasts with a *Liquidambar*, forty feet, and *Pinus excelsa*, forty feet. Weeping and European Beech, whose young foliage is light and very beautiful, contrast finely against Norway Spruce and Austrian Pine.

A grove of Horse Chestnuts, Maples, Elms and Tulips, planted fifty years ago, make a feature by themselves, while against them gleams the auburn hair of the Purple Fringe. The very light Ash-leaved Maple stands between an Austrian Pine and Norway Spruce, all some thirty years old.

Against a Hemlock screen the young shoots of which lie like flowers upon its dark face, are shown the brilliant scarlet bloom of a group of *Rhododendron Blandyanum*, which I brought from England eighteen years ago. Against another part of the Hemlock screen is a mass of large Golden Yews and a white Fringe, both unsurpassed in their beauty. The pink flowers of the African Tamarisk and the white ones of the Hawthorn make a charming contrast blooming together. In front of the Tamarisk is the Japan Judas Tree, one of the most brilliant of early flowering trees. A Pyramidal Oak sets off the Norway Maple. Golden *Spiræa* and Purple Berry are striking in contrast. Purple Hazel and Japan Snowball make a pair; and a trio of relatives are Crested Beech, Fern-leaf Beech and Hornbeam. A large White Fringe is guarded by three erect Yews, and some large English Yews, fifteen feet high and fifteen broad, show their hardiness. Two charming trees, the Cilician Fir and the Japan Larch twenty-five feet, have each its distinctive color, while the *Abies alata*, twenty-five feet high, spreads its giant wings over a Golden Yew, with a head five feet in diameter, on a naked stem five feet high—a golden globe on a pedestal of bronze. The dark *Pinus uncinata* stands against the lighter Spruce, against which is also relieved the bright pink flowers of the Judas Tree. Horizontal Yew and Hudson's Bay Fir, both dwarfs, look well together. *Magnolia Norbertiana* shows its flowers well against the Stone Pine. A *Picea*

cephalonica, thirty feet high, contrasts well with the Hemlock. A weeping, Slippery Elm and a Tamarix are graceful, one for its branches and the other for its flowers. A White Spruce and an Atlas Cedar look well together while a White Linden, thirty-five feet high shows well against a group of Hornbeam forty feet high. A row of *Pinus excelsa*, sixty feet high, is fronted by a dozen species of American Oaks, sixty feet, planted at sufficient distance from each other to develop their true beauty. A White Pine, sixty feet high stands alone, and under it there can be heard the music of its leaves. *Andromeda arborea* is a mass by itself, and few things surpass the delicate burnished copper hue of its young leaves, or the brilliant scarlet of its autumnal clothing. Groups of *Rhododendrons* of different colors have their beauty enhanced by an edging of hardy Azaleas, whose rich and varied colors excite general admiration. Weeping Hemlock, like an evergreen fountain, and Weeping Silver Fir, like an evergreen column, surmount the rock work, while Weeping *Sophora* and Weeping *Forsythia* overhang its sides. On one corner of my piazza is a Kentucky Coffee, and on the other a Yellow Magnolia, while at their feet grow a dwarf Scotch Fir and a dwarf White Pine. On the cornice of the piazza are trained, as lambrequins, white and purple *Wistarias*, Honeysuckles, *Akebia* and Virginia Creeper. The latter throws down its points from the cornice, making in Summer a very attractive green fringe and in the Autumn a very brilliant scarlet one. On a fence in the rear grow Honeysuckles, *Akebias*, Dutchman's Pipe, Trumpet Creeper, both red and orange, Bittersweet and *Wistarias* in luxuriant regardlessness of each other's rights, while the pure Lilies of the Valley hang their modest heads on the ground below. Over the lawn an occasional Agave, a bed of scarlet Geraniums, of *Coleus*, of variegated *Arundo*, of scarlet *Salvias*, or more charming than all else, the new Japan Maples, relieve the sameness of the refreshing green turf. I should not forget an old White Oak, one of two upon my farm, which were doubtless here when Columbus discovered America, for one of the same apparent generation, which fell a few years since, showed in its trunk the successive growths of nearly 600 years. This tree, now in vigor, has a trunk twenty feet in circumference, and its branches cover a diameter of seventy feet.

In laying out streets I found it difficult to se-

cure these diversified colors in contrast, for to secure symmetry it was necessary to have one sort only. At the expense of this symmetry I made one street a partial arboretum, while on another I planted Pin Oaks, on another European Lindens, on a third the light-foliaged Tulip Tree, and on another crossing it the darker Norway Maple.

I look forward to still finer results in the contrasting of colors, for the past few years have been productive of many new varieties, particularly from Japan. The silvery white of Sorbus, Eleagnus and other plants is contrasted with the gold and purple and scarlet of others, until a newly planted square in the nursery is like a lawn filled with the varied colors of bedding plants.

Could I put back the hand upon the dial of my life thirty years, I think I could find new material to make a lawn far surpassing anything I now have, and which would startle many lovers of trees with its beauty. Others, however, will have this enjoyment. The insensibility to the finest products of nature, which has for years existed, is giving way to a better appreciation, and many who have been satisfied with the trees which the traveling dealers brought them, are discovering that finer ones exist. While Edison with his microphone promises to make audible to the dumbest ear the sound of growing things, and all the secret harmonies of nature, let us hope that all beautiful things may be made visible to the dumbest sight, and a true vision based upon a true artistic sense be the possession of every true man and woman all the world over.

WATERING OF FLOWER BEDS.

BY C. G. BJORKLUND, NAT. SOLDIERS' HOME,
HAMPTON, VA.

TO AMATEURS.

"How often do you water your flowers?" To ask this question, so puzzling to gardeners, is the general inclination of most non-professionals. I, myself, have little advice to give on the subject, but wish to say that if we were more inclined to reason, calculate, and to consult nature, that question would not be asked so universally. The point is to know when to apply water; this is something what no man has yet been able to describe. There are so many things to be taken into consideration, the variety and stage of growth of plants, the character of the soil, the season, the temperature, the situation,

etc., which only the experienced can distinguish. But there certainly need not be much stress laid on the subject concerning flower beds. It is different to plants in pots, where their life depends on proper moisture. But allow me first to say a few words in regard to the general belief that "it will not do to water flowers while the sun shines on them," even if it is at five or six P. M. Now, to water or sprinkle on the flowers is in fact, not good, whether in the sun or shade, at any time, and that is a rule wherever the plants are placed. Growers of fruit under glass have to know this. We need only call to our minds that if rains occur while Peach and other fruit trees are in blossom, it will impair the fructification; and it is my opinion that if pollen is washed off before properly developed, the petals, as being members of the system, might hang on, but a premature fading of the flower will be the consequence.

But let us return to the flower beds, I fear they are getting dry. The injury meant to occur to plants by watering in the sunshine is, that the water lodging on the flowers and leaves should become so hot from the effect of the sun, before its evaporation as to scald them. How far this is possible, or in what latitude, I will not venture to state, but doubt that there is any danger of it in the Middle States, if in this country at all.

At the great Exhibition at Philadelphia, in 1876, the men that watered flower beds in the morning and evening, and the grass in the middle of the day, because other times were not sufficient, while the mercury marked 95° and 100°, were often told by visitors that the result would be fatal, but no such result could be observed. The real objection to it is the wasting of water, because a considerable quantity evaporates in the air, especially if done through a hose, and renders the work ineffective. This is plain to everybody, and we will find that if a syringe with a very fine rose is discharged in the air, on a hot day, little or nothing will fall to the ground.

When plants are watered, they should be given it so freely that the moisture should be calculated to go some five or six inches deep. In this way the roots will work in the right direction and seek the moisture, while sprinkling a little on, now and then, causes them to linger near the surface. Thus the plants become delicate, and will flag after a few hours exposure to the sun.

Before watering, the ground, while there is

room for it, should be stirred up with a hoe or stick roughly between and round the plants. If a pot is used, the water should be given heavy with the spout, and as soon as practicable the soil may be leveled with a small rake, which will prevent formation of crusts or cracks.

The evening is the best time for watering, because the moist beds will to a greater extent attract the night dew, and parts of the ground not well soaked through will have time to do so before the sun commences to again draw it out, in form of vapor.

SEEDS AND SEED PLANTING.

BY CHAS. H. SHINN, NILES, CAL.

The curious things about seeds—Some of the secrets—Sowing of flower seeds—Preparation of soil—Covering—Tree and shrub seeds—The critical periods—Subsequent treatment—The three enemies—The delight of success.

The beginning and the end of plant life are in the seed. Nothing is so nearly a constant miracle as this endless round of nature, from the planted seed, through the leaf, stem, blossom, and forming germ, to the ripened seed of another generation. A deep interest surrounds every step of the process, so often seen, so seldom carefully studied. Noiselessly, when the first rains of Winter come, all the brown slopes thrill and quiver with countless budding blades that climb from hidden seeds. Noiselessly, too, over all the new-ploughed, smoking acres, the promise of the harvest springs into being; the seeds of the old-fashioned flowers in the little gardens, begin to found their palaces, and rear their tinted spires, on which, in due season, their banners of blossoms shall wave. By the low marshes, where the sedges and *Mimulus* grow; along the rivers, bright with *Lupines* and *Gilias*; in our deep gulches, fit home of *Trilliums* and *Aristolochias*, of *Calycanthus* and *Azaleas*; on the long mountain slopes, sown with blue *Nemophilas*, and countless growing bulbs—everywhere the glad germs spring, and the world laughs into leaf and blossom.

Men have learned to produce this miracle of germination at their own will, by imitating nature's conditions of heat, moisture and darkness. So, mainly by seeds, which retain their life for a considerable, though varying period, and can be easily transported, we are enabled to possess the plants and flowers of every land;

some of them to brighten our conservatories, some to give an added grace to the garden, and some to become field products, and so increase the wealth of the individual, and the prosperity of the State. The history of the introduction of many seeds, now common, reads like a romance—the romance of horticulture. Ardent collectors have risked their lives to gather and preserve seeds; the strangest accidents have scattered them; they have been carried in unknown ways, and suddenly have appeared in new places; kings have made treaties for them, and have planted them with their own hands. As Tennyson held the "flower from a crannied wall" in his questioning hand, feeling that if he could only read its story the secret of the world would be known, so might we take the shelly seed of some Indian palm, or tropic Cycad, and ponder long upon the life that lies hidden within it, the dormant cells, the starch and albumen, and nice provisions for covering. In such moods the work of the gardener and of the farmer seem to run parallel to the very fibres of being—in truth a simple and holy work.

But after we have thought of the wonderful things connected with the beginnings of plant life, we must proceed to put a practical point to our article. Given the seed—this brown mystery—and how shall we set it at work; how shall we rouse its dormant energies; what are the "laws of germination?"

The secrets of starting seeds are very simple, warmth and moisture are the two essentials. These must be applied evenly, steadily, and with patience, for they are as important elements in sprouting seeds as pork and beans, beans and pork were in our miner's typical dinner. The mechanical condition of the soil is of great importance; it should be light, mellow and healthy.

Flower seeds are best sown in boxes, two and one-half inches deep and one foot in length and breadth. Cut small holes in the bottom for drainage, and fill the boxes with prepared soil. Just here the amateur begins to be puzzled, if he has consulted a series of authorities. Peat, loam, silver sand, compost, sods, leaf mould, variously compounded—these look mysterious enough, to be sure! But there is in practice a simpler way. Take any garden soil as a basis, and mix with it sand, and the light mould from under an old straw stack, or from the hollows on the mountain sides, where leaves drift and decay, until you have a light, rich and friable

soil. No definite rule respecting the proportions can be given, except that the prepared soil should hold moisture well, should have no tendency to become hard, and should never crack, even if in the sun.

Fill the boxes carefully with moist, but not wet earth, and, with a small board, press the soil evenly and closely, so that it will retain moisture better. The board must be planed on the under side, or the soil will stick to it, and it will be found convenient to nail a little handle on the upper side. Sow your seed broadcast, if you are sure the soil is not weedy, and if you will know the plants when they come up; but, in general, it is best to sow in marked rows, in all cases scattering the seed evenly. Now take a sieve, made by tacking a square of one eighth inch mesh wire netting to a light frame, and sift light soil, which has been rubbed and well mixed, over the box, until the seeds are just covered. Take the little board again and press the soil carefully. If any seeds are in sight, sift a little more dirt on and press again. Small seeds must never be covered more than their own thickness; the surface must be level and firm; keep it damp, but not dripping, and you will succeed. Countless thousands of seeds perish from too deep planting. The chief uses of covering are to preserve moisture, and to keep the seed in darkness during the germinating process. Very fine seed must be sown on carefully sifted earth, which has been sprinkled before the sowing is done. Cover the box with a pane of glass, and if it looks dry, spray it with a brush dipped in water and drawn lightly over the edge of a stick. Be careful to wipe the under side of the pane of glass occasionally, or the moisture may be so much as to rot the seeds.

The seed-boxes must be set level, for otherwise the constant tendency is to wash the light seeds all to the lower side, and destroy many whilst sprouting. The soil must be equally pressed all over, or else watering will cause some portions to sink lower than others, and so form little puddles, which drown part of the seed. The watering must be done with a fine rose held so that the soil does not wash away, for this, too, is a fruitful cause of failure, and the time for watering must be in the evening or early morning. Still, if the boxes look dry at any time, water them and shade from the sun, which will harden the surface and slaughter the hopes of the coming plants.

(To be Continued.)

EDITORIAL NOTES.

STUARTIA VIRGINICA.—We have in this country two species of *Stuartia* namely, *pentagyna* and *Virginica* both exceedingly beautiful. In the *English Garden*, for July 13th, there is a colored plate of the *Virginica*. Judging from the remarks on the illustration, it appears that there are as few specimens of *Stuartia* in England as there are under culture here. The large white flowers are very attractive, resembling those of a single *Camellia*, in fact *Stuartias* and *Camellias* belong to the same natural order. The *Stuartia* was first brought to notice by Catesby, a South Carolina botanist, who named it in honor of John Stuart one of the Marquises of Bute.

TREES IN LARGE CITIES.—The time will probably come when street trees will be a matter of public concern, and not left, as it is now, to private enterprise. As it is now, the householder feels the need of shade from the Summer's sun, and protection from wintery blasts, and he plants or not, according as he may have the money to spare, or feel such enjoyment agreeable to him. But the public have an interest as well as he. His trees shelter other people, and the foliage is no mean element in securing public health. Indeed, from our point of view, the great public is much more benefited by street trees than the property owner who plants them.

It becomes, therefore, a question whether cities should not take some share in the expense and care of shade trees, as well as the owners of property. In our opinion all cities should have a department of public parks and gardens, the whole under one central management, and street trees to be considered as coming under their charge, as well as small open air spaces and large public parks.

At the present time too much is expected of the citizen. He has to plant the trees, care for them, guard them against all sorts of trespassers, and protect them from everybody's horses, and then after all have the trees killed by leaky gas pipes underground, which the city officials could make gas-tight as well as not.

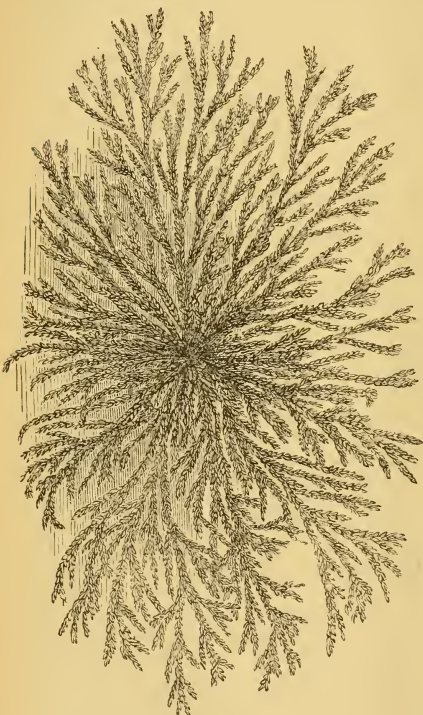
PRIMULA JAPONICA.—When this plant was introduced a few years ago, it was supposed that it would soon become popular. But of late it has been neglected, evidently from a want of knowledge in regard to the treatment it requires. While on a visit to Mrs. H. Ingersoll, the writer

saw it doing remarkably well in her wild garden, placed in the woods. Judging from this, it appears that the plant requires a moist and partially shady place.

HYPERICUM PYRIMIDATUM.—It is strange that such beautiful plants as *Hypericums* are not cultivated more extensively; they are easily grown and are admirably suited to our climate. The species named above is an exceedingly beautiful one. We are led to speak of this from

club moss from Japan, give the following description of it:

"It is caulescent, the incipient stem rising to about an inch or an inch and a half, then producing a profusion of circinate frondose branchlets, rather rigid in texture, which become horizontal as they lengthen, and are furnished with numerous lateral offshoots, the whole forming a good-sized spreading plant, with a regular but not formal outline. The color of the



SELAGINELLA JAPONICA.

having received from a correspondent a flower of this species to name. The flower measured over two inches in diameter. They bear our Summer suns very well indeed.

NEW OR RARE PLANTS.

SELAGINELLA JAPONICA.—Messrs. Jas. Vietch & Son, who introduced this beautiful species of

plant is a rather deep green, quite distinct from any other *Selaginella*."

In America almost everything from Japan is found to be perfectly hardy, and we have no doubt it will prove a valuable addition to American Fern gardens.

WHITE LILIAM AURATUM.—According to a London paper there has been produced a nearly white variety of this beautiful Lily. It has been named *Lilium auratum virginialis*.

WHITE WISTARIAS.—The *American Agriculturist* notices the existence of a white variety of *Wistaria frutescens*, the American *Wistaria*, which is not regularly in the nursery trade. The white Chinese *Wistaria* is. It makes a capital addition to the beauty of the common purple kind. The two growing together is a pretty sight. This white growing with the American purple would also make a very agreeable picture.

SCRAPS AND QUERIES.

NAMES OF PLANTS.—"A Lover of the Shrubs," Boston.—The names of your plants are, No. 1, *Spiraea callosa*; No. 2, *Spiraea Billardi*.

BELGIAN HONEYSUCKLE.—T. M. P., An Old Subscriber, Kingston; R. I.—Your Honeysuckle is the Belgian Monthly, a variety of *Lonicera Periclymenum*, the Honeysuckle of the poets, and of the Old World.

LAWN GRASS.—F. Frankford, Phila., writes: "I am interested in the note which you made to your other Philadelphia correspondent about the Lawn Grass. I have what I thought a Blue Grass lawn, but have noticed two shades of color in patches, and some of the lighter (and finer leaved,) patch getting near a shrub bush, I allowed some to make stalks, one of which I send you. It looks very much like the Blue Grass stalks, but it seems to do better in the cool and shade than the darker. Are there two kinds of Blue Grass?"

[It is really very hard to decide on kinds by

these common names. Botanical names are generally given by botanists, whose names all the rest agrees to stand by, and thus there is a certain degree of uniformity; but nobody knows who gave common names, nor how many are at naming the plants, and hence nobody can tell what is the plant meant by any common name. The grass sent is really *Poa trivialis*, or, as it is given in botanical works, the "Rough Stalked Meadow Grass," though like what is known as "Kentucky Blue Grass," which is *Poa pratensis*, and not *P. campestris*, as a slip of the pen made us say in our late note, it is very distinct in some respects. It seems more common than we supposed in Pennsylvania, and as the lightness of the color is referred to in distinction, it opens up an old question whether what was originally known in Pennsylvania as Green Grass, may not really have been *Poa trivialis*, and that it was not the same as *Poa pratensis*, the Kentucky Blue Grass, as of late years has generally been believed. Not having the means to decide this question, we merely put the suggestion forward. If anyone can send us specimens of what the old people knew as "Pennsylvania Green Grass," we should be very much obliged. It is also an important question how far the *Poa trivialis* is really adapted to make good lawns. When we get that Botanic Garden, which the newspapers tell us the Commissioners of Fairmount Park are about to inaugurate, patches of all these grasses together will afford valuable popular instruction.—Ed. G. M.]

GREEN HOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

EPIDENDRUM.

BY C. H. S., BALTIMORE, MD.

This genus of Orchids is a very large one, containing several hundred species and varieties, and had all the species that were formerly in it been still retained, it would contain about one-fourth of the Orchid family. I have often thought that the genus *Polypodium* among Ferns, *Amaryllis* among bulbs and *Epidendrum* with Orchids, were intended for the benefit of ignorant plant collectors. Any newly discovered plant of either of these genus, that would not fit elsewhere, found a temporary home; if a

Fern, as a *Polypodium*; a bulb, as an *Amaryllis*, or an Orchid, it was called an *Epidendrum*. Though our modern botanists have done much to clear up these genera, they are still very unwieldy and I think are capable of division.

By the way, in the July number of the *GARDENER'S MONTHLY*, some one writes of "*Amaryllis longifolia*." There is no such plant as "*Amaryllis longifolia*." It is *Crinum capense* vide, Herbert on *Amaryllidaceae*, page 269. A mere glance at the plant should convince anyone that it is not an *Amaryllis*, or as Herbert has named the S. A. varieties *Hippeastrum*. Though the genus *Epidendrum* is a very large one, but a small percentage of the species are

considered ornamental. A very great proportion of the flowers are greenish-yellow, or brownish-green, with little to recommend them but their odor and length of blooming, and where collections are large, some of the best of the odoriferous species come in very well, and give but little trouble in their cultivation, for with one or two exceptions, Epidendrum are the very donkeys of the Orchid family. They will bear more neglect and be more grateful for a little attention than any other Orchids. The genus is very dissimilar in growth and manner of flowering, though all make their bloom from the top of the bulb except *E. Stamfordianum* (syn.) *Basilare*. They can be divided mainly into two classes. Those making short turbinate bulbs, and those making long terete bulbs often four or five feet long. Though, as a whole, the Epidendrum are not showy, still there are a few very handsome species, and without which no collection of Orchids would be complete.

E. bicornutum. A native of Trinidad and Guiana. This is quite a difficult plant to cultivate, and I lost several plants before I succeeded in growing and blooming it. It requires the hottest place in the house, and I have seen the glass 110° in the place where my plants hang. It has hollow bulbs from eight to twelve inches long, with two or three stiff leaves. The flower stem from twelve to sixteen inches long, and bears about twelve flowers, two inches in diameter. The color is pure waxy white, except the lip, which is speckled crimson. If kept dry the blooms last thirty to thirty-five days, and has a delightful odor. Blooms in May or June.

E. aurantiacum. Guatemala. In growth like *Cattleya Skinneri*. The flowers are orange color. Blooms in April.

E. amabile and dichromum. Brazil. Short bulbs, with panicles of flowers, white, rose, or pink in the sepals and petals; lip crimson. This has not done well with me. Bloomed once, but since then the bulbs have decreased in size.

E. macrochilum album and Roseum, syn. *E. atropurpureum*. Short bulbs with two stiff dark-green leaves. Sepals and petals brown, lip white in some varieties, and rose in others. It can be grown among the cool Orchids.

E. nemorale. Has short, dark-green bulbs and dark leaves, with a panicle of rosy flowers, lip lighter, with some red lines at the base. The flower stem is stiff and upright. I was fortunate enough to get several plants at a sale of Young & Elliott's. I also had another Epidendrum in the

same lot with much darker flowers, lip beautifully striped with pink, and the blooms were in a flexuous raceme. Both have a very fine odor, and remain a long time in bloom. Blooms three and a-half inches in diameter.

E. phœnicium. Cuba. Short bulbs; sepals and petals brownish-purple, lip pink and crimson. This is a beautiful species and rare. I have bought many, but never got the true one but once. Two inches in diameter.

E. vitellinum. Mexico. Has small bulbs with a bluish tinge; flowers orange-scarlet, with a very narrow bright yellow lip. There is a larger variety under the name of *vitellinum majus*; flowers larger, two inches in diameter. I have one now in bloom, which has been open seventy days and the flowers still fresh.

There are other desirable Epidendrums of the bulbous species. *E. selligerum*, *E. prismatocarpum* and *E. primulinum*. I have one with racemes of neat white flowers, lip striped pink. It was bought for *E. phœnicium*. I have another with flower stems over four feet long, and laterals one foot. Flowers light yellow, with some brown marking on the lip. Came from Honduras, and is very fine, blooms last forty days, and remarkably sweet.

E. Stamfordianum. Has long club-shaped bulbs, and the flower stem comes from the base of the bulbs. The flowers are greenish-yellow, spotted reddish-brown. Makes a dense raceme. Requires more heat than most Epidendrums.

E. aloifolium, syn. *E. falcatum* and *E. Parkinsonii*. Guatemala and Mexico. This is unique for an Epidendrum. It has no bulbs, but in growth resembles a large *Brassavola*, and bears its flower nearly in the same way. It bears one or two large flowers, white, with a slight yellow tinge, but in other varieties the sepals and petals are brownish-white. It blooms in June, and with me makes its growth in the Winter.

E. radiatum. This is not very showy, but a large plant with a dozen spikes of blooms; makes a neat appearance. Bulbs about five inches long, dark green and furrowed, flowers one inch in diameter, sepals and petals greenish-white, lips white, beautifully marked with purple veins.

E. ciliare. Makes long bulbs; flowers white, sepals and petals slender, often two inches long, lip white and beautifully fringed.

E. cochleare. A curious species from the West Indies and Central America. Sepals and petals greenish-yellow, reflexed like the petals of a cyclamen; lip dark purple with golden-yellow

lines. It lasts long in bloom. I have seen one stem in flower for over three months.

E. crassifolium, syn. *E. ellipticum*. A tall straggling plant having short thick leaves on a stem often four feet long. The flowers which come from the top are small, but of a bright pink, with a fringed lip. Where there is plenty of room it is desirable, as it is nearly always in bloom.

E. cinnabarinum and *E. Schomburgkianum*. In growth like *E. crassifolium*, but not so strong, flowers in the same way, and keeps long in bloom. Makes a more compact plant than *E. crassifolium*. Should be grown in a basket, and the slender stems bent round. This gives the plant a better shape and causes it to break new growths. The flowers are light orange—scarlet lip fringed yellow.

E. rhizophorum, syn. *E. radicans*. A tall grower, with the same habit of growth as *E. crassifolium*, but even taller. However, the stem can be easily bent when young. It makes numerous small roots along the stem. Flowers in a raceme, orange-scarlet; keeps in bloom a long time. I have an Epidendrum from Brazil of the same terete habit, but it only grows about eighteen inches high, with light red flowers. Within the last ten years there has been introduced into Europe several more of these tall growing Epidendrums, *E. cattillus*, *E. cnemidophorum*, *E. Frederic Guillulmi*, *E. paniculatum* and *E. syringothyrsus*. Judging from the descriptive and catalogue prices, these should be very fine, though neither is an infallible test, as anyone will find who goes largely into importing Orchids from Europe, from catalogue descriptions. They are inclined to cut things too fine, and make too many species from mere varieties. This is not only true with regard to Orchids, but all hybrid plants, Geraniums, Roses, &c.

The species of Epidendrum with bulbs should be kept near the light, and must not get much water until the growths are well advanced. In fact they seem to require less moisture than any other Orchids. There are no doubt many other fine varieties to be introduced, but the bulbs so much resemble one another that it is risky buying them at auction, as they seldom turn out true to name. At least that is my experience.

ALOCASIA JENNINGSII.

BY MANSFIELD MILTON, CLEVELAND, OHIO.

If this *Alocasia* was to get anything like the

good treatment bestowed upon the finer species of this genus, cultivators would be well repaid for the extra care, for, although a plant which will grow under more adverse circumstances than many of the other *Alocasias*, still it is only when good treatment is given that its true beauty is seen. The leaves grow about six inches long, the ground color a glaucous green, between the principle veins are blotches of black. For soil, a good mixture of peat and sphagnum moss, with a number of small pieces of charcoal through it, is most suitable; plenty of drainage is requisite, and makes the best plant when grown in a pan. During its season of growth it requires, to bring out the true markings, a high temperature and plenty of moisture, as red spider is a great enemy when grown in a dry atmosphere. When at rest do not keep it in a low temperature, but withhold giving too much water at the roots.

WINDOW BOXES AND JARDINIÈRES.

BY MRS. C. B. JONES, MONROE, MO.

Beautiful flowers, climbing vines and luxuriant foliage, have their beauty greatly enchaned by tasteful receptacles, and those other accessories, such as handsome trellises, tasteful stands, &c., which testify to the care bestowed upon them.



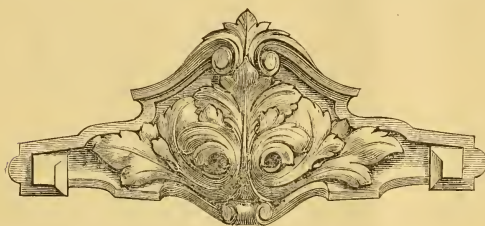
In this day, when "retrenchment" is the word that governs the majority of households, it becomes a matter of some importance for those who, with artistic tastes but limited means, desire to surround themselves with the beautiful in nature and art, to be able to do so with as little expense as possible, therefore it is with real pleasure we offer to you a description of some receptacles for window plants, which we have made with satisfaction to ourselves and the admiration.

of all who have seen them. The window boxes are made as usual, an ordinary pine case, ten inches to one foot deep and from one to two feet wide, the length of the window, and lined with zinc or painted tin. Now the face of each box is embellished in several different ways, three of which we will describe:

Imitation of Inlaid-wood.—We endeavor to have the wood forming the front of each box of smooth pine, with colored streaks and markings of those clear rich tints peculiar to this wood. The extreme edges are either finished with a simple moulding, or if this is not practicable, with a border corresponding with the centre, which is

dampened and removed, and the leaves, tendrils, &c., are then veined and marked with a very fine brush or pen, and the entire surface twice varnished with copal, rubbed down with pulverized pumice stone on a wet flannel pad, washed and re-varnished; this course pursued until a fine polish is secured. The leaves will appear as if tinted with the rich, clear shades of Autumn, and the effect is exceedingly striking, looking like fine inlaid-work.

We have one ebonized with a geometrical border, and an edge of the "Grecian Key," then curious Japanese figures, instead of the vine, for central embellishment. The wood in this was



thus embellished. Some design suited to the size of the board is marked out, and cut from thick paper. We have one with a circle in the centre, from which spring, on each side, a pattern of vine, leaves and grapes, larger in the centre and gradually diminishing at the ends, where four corner-pieces, corresponding with the centre, but only one-fourth the size.

These paper patterns are pasted upon the board in proper position, then the ground is either stained with burnt umber, ebonized with a decoction of logwood and a wash of vinegar, in which rusty iron has been kept for several days, or covered with spray or spatter work, in any color preferred. When dry the papers are

dark and richly marked, and the effect is surprisingly fine, appearing equal to the finest colored woods.

[Messrs. W. B. Gleason & Co., 212 West Camden St., Boston, have kindly furnished us with some cuts from their Illustrated Catalogue to go with Mrs. Jones' article.—Ed. G. M.]

FLOWERING OF THE RAPHIS FLABELLIFORMIS.

BY DAVID M. BALCH, SALEM, MASS.

A good specimen of *Raphis flabelliformis*, in my collection, is at present in flower, showing a strong branching spike from the axil of the fourth leaf from the apex of the plant. The main

stem of the specimen, that showing flower, is about five feet high, and surrounded by eleven offsets of various sizes. B. S. Williams, in his "Choice Store and Green-house Plants," says this species is not known to have flowered in England, hence the fact of its flowering under green-house culture may be a phenomenon of sufficient rarity to merit being put on record.

EDITORIAL NOTES.

MIXING OIL AND WATER.—It is well known what an admirable thing coal oil is in destroying insects on plants when not too strong, but it cannot be diluted with water. In the attempt to mix it, the oil would stay on the top, and the water go to the bottom of course. Mr. Knight, in the London *Florist* mentions a plan that he has been pursuing with success. He uses coal oil in the proportion of one wine-glassful to four gallons of water. He keeps the two mixed with the syringe in this way: before using he squirts a syringe full into the lower part of the vessel, and immediately draws it in again and applies it to the plant. By following this method, the oil and water becomes well mixed.

HOW TO MAKE SKELETON LEAVES.—The *Gardener's Chronicle* gives the following as Mrs. Cunson's plan: "For the dissection of leaves I find the process of maceration too long and tedious, to say nothing of the uncertainty as to the results; I have therefore adopted the use of alkali in saturated solution, the specimens to be introduced while the liquid is heated to boiling point. The time of immersion to be regulated by the character of the various leaves, and the nature of the epidermis to be removed. When the specimen is freed from epidermis and cellular tissue, it must be subjected to the action of chlorine to destroy the coloring matter. The introduction of peroxide of hydrogen serves not only to render the lace-like specimen purer in color but preserve it also.

"In destroying the coloring matter in Ferns this also is invaluable; added to the chlorine it gives a solidity to the bleached fronds, and appears to equalize the action of the chlorine. For skeletonizing capsules, the slow process of maceration by steeping in rain-water is alone available—a moderate heat may be applied to hasten the process, but alkali is useless.

"The only known flower which can be dissected is the *Hydrangea japonica*. The fibrous

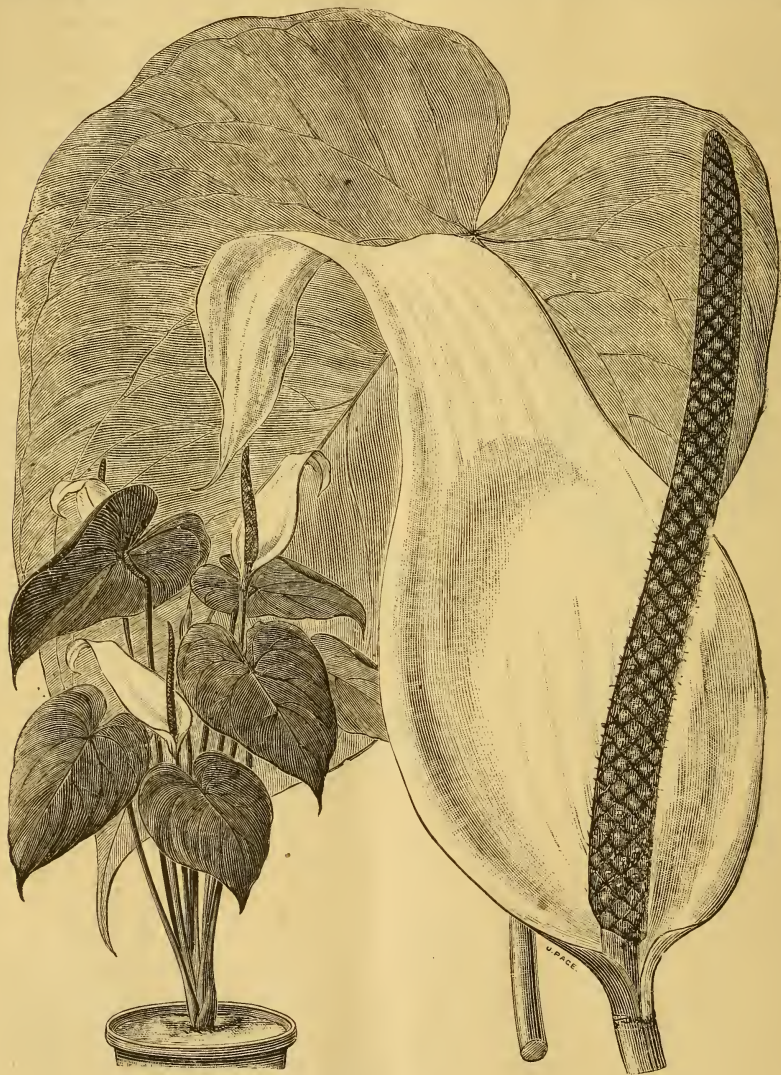
nature of the petals renders it easy to skeletonize in the perfect truss in which it grows. Skeletonized leaves and capsules appear to gain in the process a toughness and durability not possessed by them in their natural state."

GROWTH OF A MARECHAL NIEL ROSE.—The *Gardener's Chronicle* gives the following good growth as something very remarkable, but we fancy some of our American Rose-growers could make a better showing: "At Messrs. J. & G. Hayes' nursery, at Edmonton, there can be seen growing overhead in a plant house two plants of Marechal Niel Rose, on their own roots, that were planted out at each end of the stage, carried up pillars and along the roof, for the purpose of supplying flowers. The first year the plants appeared to be engaged in the preparatory work of rooting themselves into the fine natural loam that abounds in the district; the next year the plants put forth leading shoots some fifteen feet or so in length, but the next year each plant, in six weeks, put forth shoots forty-five feet in length, and since then only small branches have been formed that bear plenty of flowers. It has been said that a Marechal Niel Rose soon wears itself out after such vigorous efforts: this appears as if it would be the case with the two Roses under notice. The main stems have swollen to a great size, and now at a short distance from the ground, having swollen out in a kind of canker-like formation, there are appearing ominous splits in the bark in an upward direction that portend dissolution. In each case the strong shoots to which allusion has been made sprang directly from the soil, from a point of the parent stem just below the soil, consequently the junction is beneath the cracking bark. It is Messrs. Hayes' intention to build up a kind of shallow pit of soil round the base of the shoots, in the hope that they may be induced to put forth roots, and so get a new lease of life.

NEW OR RARE PLANTS.

ANTURIUM ORNATUM.—Most plants of the Arum family of which the well known *Richardia* or *Calla* is an illustrious example, prove such excellent kinds for room or greenhouse culture, that cultivators gladly welcome any new and good one. When the writer was visiting Mr. B. S. William's nursery, at Upper Holloway, near London, last spring, *Anthurium*

ornatum, a new one of this class was in bloom; some of them are unsurpassed for the beauty and very attractive. Mr. W. has kindly furnished us with the following description of it:—



ANTHURIUM ORNATUM.

nished us with the following description of it:—the magnificence of their foliage; but the one
 “The Anthuriums comprise a very large family now offered combines both these features; in

well-grown plants the petioles are about three feet long; leaves light green, and cordate in shape, from nine to twelve inches broad; the flowers are thrown well above the foliage on stout flower stalks; the spathe, which is pure white is from six to eight inches in length, and two and three-quarter inches in breadth, tapering towards the apex; the spadix, which is about six inches in length, stands up very conspicuous, being nearly black, but covered with a violet hue; this most interesting plant should find a place in every collection.

SCRAPS AND QUERIES.

ROBERT'S PORTABLE TERRA COTTA DRY STOVE.—Can any one inform a Doylestown, Bucks County Pa., correspondent if "Robert's portable patent terra cotta dry stove" for heating plant houses, can be obtained in this country, and if so from whom? It was noticed in the *London Garden*, March 1st, 1873, in vol. 3d, and he thinks from the description given, it would suit admirably in a good sized plant cellar, which he uses for his Oranges, Lemons, Cape Jasmines, &c. It gets ample light from three large area windows; keeps out frost perfectly, and his plants thrive in it; but it is not warm enough to induce them to flower and set their fruit.

OILED SHEETING.—J. M., Brenham, Texas, writes: "Can you please inform me through

the MONTHLY, what will keep sheeting from rotting when exposed to the atmosphere. We have to use it on the roofs of our greenhouses, and propagating houses; we cannot use glass, on account of the heavy hail storms we are visited with frequently. I have seen whole roofs of greenhouses of glass utterly demolished in a few moments by these fearful storms, they come so very sudden there is no time to make any preparations to protect glass, and the hail is larger than pigeon eggs, and glass will not stand that. We have been using good strong sheeting and have given it two coats of linseed oil to keep out water, which it has done; have used both the raw and the boiled oil, and have found no difference in it. It seems to stand here very well in the Winter and Spring and plants grow well under it, but through the Summer it rots away at once. Through the Winter and Spring, after the oil is put on, the sheeting looks perfectly white, but directly the hot weather sets in, the sheeting turns quite black, and plants will not do well in that dark light. Now, can you please tell me of any preparation we can use that will keep the sheeting from rotting and becoming full of mildew? Can you also tell me where I can procure fresh seed of *Magnolia fuscata*?"

[We know of nothing better than the plan already in use by our correspondent. The New Orleans seedsmen could probably get the seed required.—ED. G. M.]

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

The planting of the Pear, Apple, Plum and Cherry will soon be in season; Peaches Apricots and Grape vines, except south of the Potomac being for the most part left till Spring. Choose a dry piece of ground. If not naturally dry, it is best to throw the earth up into banks or ridges and plant on them. This is cheaper and better than underdraining. In planting, if the roots appear deep, cut away some of the deeper ones, and shorten some of the top of the tree at the same time. This is particularly true of dwarf Pears which are often grafted on rather long Quince stocks. Cut away all of the Quince root but about six inches, and if this should be found

to leave few roots, cut away the top correspondingly. Most of the failures with dwarf Pears come from bad Quince roots, so deep in the ground the lower parts decay, and this decay gradually communicates upwards until the whole system becomes diseased. The more tenacious the subsoil the more necessary it is to attend to this matter. We spoke of pruning in proportion to injury. It will be found that all trees are a little injured by removal, therefore all trees should be a little pruned at transplanting.

Whitewash is frequently resorted to by farmers, but the great objection is its unsightly appearance—the result is otherwise good. The great opposition to washes formerly was, that the pores of the bark were closed by them—this

was on the supposition that the bark was alive, but the external bark of most trees has been dead years before the time of application; and "the breathing" if so the operations of the pores can be called, it is through the crevices formed in the old bark by the expansion of the growing tree, by which the living bark below has a chance of contact with the air. No matter what kind of coating is applied to the bark of a tree, it will soon crack sufficiently by the expansion of the trunk to permit all the "breathing" necessary.

The main crop of Spinach should now be sown. Properly cooked, there are few vegetables more agreeable to the general taste, and few families who have gardens will wish to be without it. It is essential that it have a very well enriched soil, as good large leaves constitute its perfection as a vegetable. As soon as the weather becomes severe, a light covering of straw should be thrown over it. A few Radishes may be sown with the Spinach for Fall use.

Turnips also may still be sown. In fact, if the soil be rich, a better quality of root for table use will be obtained than if sown earlier.

Celery and Endive will still require the attention in blanching described in former hints.

Cabbage and Cauliflower are sown this month for Spring use. The former requires some care, as, if it grow too vigorous before Winter, it will all run to seed in the Spring. The best plan is to make two sowings—one early in the month, the other at the end. The rule is get them only just so strong that they may live over the Winter in safety. Many preserve them in frames; but they should have wooden sashes or shutters instead of glass, so as not to encourage them to grow much.

Cauliflower, on the other hand, cannot well be too forward. Most persons provide a pit of stone, brick or wood, sunk five or six feet below the surface of the ground, into which leaves, manure, or any waste vegetable matter is filled. When quite full it is suffered to heat a little, when it will sink somewhat and have more material added to it; about six inches of good rich loam is then placed on it, and early in November the Cauliflower planted out. The object in refilling the leaves so often is to insure the plants remaining as near the glass as possible, which is very essential in the growth of Cauliflowers. Lettuce is treated in the same way, and seed should be sown now to prepare for the planting. The Cabbage Lettuce is the kind usually employed.

COMMUNICATIONS.

THE CRESCENT SEEDLING STRAWBERRY.

BY W. F. BASSETT, HAMMONTON, N. J.

I recently paid a visit to the farm of Ezra Stokes, at Berlin, N. J., where this variety has been planted in alternate rows with Wilson's Albany, Charles Downing, Capt. Jack, Monarch of the West, Great American, &c., &c., all receiving the same treatment for the purpose of affording the public a chance to test the comparative merits of this variety. As this was intended for a practical test of value for general cultivation, no extra manuring was given, the land being prepared just about as it would require to bring a fair crop of corn. The plants were set in single rows, and allowed to run into beds three to four feet wide, and the Crescent showed its first advantage in filling the beds twice or three times as full as any other variety. In vigor and health of foliage it also showed a marked superiority; while in quantity of fruit, it was so far ahead of all the others "That he who runs could read." I should estimate it at not less than double any other, not excepting that standard of productiveness, Wilson's Albany, and in comparison with this latter variety, the berries were lighter in color, better in quality and averaged larger in size. One important point I observed was the very small number of flowers which failed to produce good sized and perfect fruit, no other variety coming any where near up to it in this respect. A few plants were kept in hills to try that method, and on one of these plants a friend counted thirty stalks full of fruit. I have also been informed by Mr. S. (who by the way, is a thoroughly reliable man), that since my visit, after a delay of three days rainy weather in picking, scarcely any soft berries could be found.

A NEW CHERRY.

BY CHAS. DOWNING.

The Ida Cherry, a new and very promising early Cherry, raised by E. H. Cocklin, of Sheperdstown, Cumberland County, Pa., who kindly sent me, by express, a liberal supply, which came in good condition, although fully ripe and of tender flesh. Mr. Cocklin informs me that it is a seedling of the Cocklin's Favorite, about twenty-five years old, and having borne good crops for fifteen years, is considered worthy of

general introduction. The tree is a vigorous, upright grower, and an abundant bearer, ripening about the same time as the May Duke. It is named after his daughter Ida.

Fruit rather large, obtuse conical, slightly compressed, suture slight; skin pale whitish-yellow, nearly covered with light bright red, more or less mottled, stalk of medium length, slender, inserted in a rather large deep cavity; flesh very tender, juicy, rich, very good, if not best quality, pit very small.

GRAPE CULTURE IN TEXAS.

BY W. BUSTIN, DALLAS, TEXAS.

In one of the numbers of the MONTHLY, I saw your remark, that according to Prof. Buckley's report, Grapes did not succeed well in Texas. What does the Prof. think to be the matter? Let him come to Dallas, I will show him successful vineyards, in spite of all the wet weather past, though at the same time I will show him Grapes of the *Vitis vinifera* which have all rotted.

Further, his remarks on Red Raspberries being a failure. Does the Prof. know that from his own experience, or has he read that in catalogues? Further: the Prof. says that Apple trees will not grow unless from Southern nurseries. I would advise him to acclimate his soil first, by frequent stirring, the hot sun is very much needed on it, and then select such varieties as are best suited for the climate, no matter where they are grown, but he must give his order to nurserymen; not to men who know not how to handle a tree.

FRUIT CULTURE IN KANSAS.

BY JAMES TRUITT, CHAMUTE, KANSAS.

One would not suppose that Southern Kansas was adapted to fruit, especially the Apple, as the Winters are short and our Summers very long, we would think that Winter Apples especially would ripen before gathering and not keep, such, however, is not the facts. I saw as nice Apples at Fort, last Winter a year ago, as I ever saw in Kentucky. They were good size, high colored, fine flavored, solid, and keeping well, and when I came out here last Spring I saw as nice specimens as could be grown anywhere. They were high colored, solid and sound and very handsome. Last September I sent a box of Apples containing forty varieties

from my old orchard in Kentucky to Lawrence, Kansas, to some fruit men there, and they sent me as a compliment forty varieties of Kansas Apples—some of these I was informed were plucked from trees grown in my old Kentucky nursery. I thought they were as large and as handsome specimens as I ever saw in my life. Southern Kansas, I think, produces as fine peaches as can be grown anywhere. Amsden was ripe here June 14th, and a few days ago I visited an orchard northeast of Chamute and counted fifty-five specimens on a tree, two years from bud, six feet high, one inch at the collar; smaller tree had no specimen. I saw what nurserymen would call a good second-class tree loaded with fair specimens of this variety.

We are having this season all kinds of fruit. I have visited several orchards containing all kinds of fruit. Peaches hardly ever fail here. Raspberries and Strawberries did well here. I had a good laugh at one of my neighbors here; he said Strawberries would do no good here. He then had one-tenth of an acre in plants; they commenced ripening the first of May, and he had a bountiful crop, gathering some days forty quarts. When I commenced laughing at him, well, he said, "this is the first good crop I have had in seven years." I arrived here on the 26th of February, and everything had to be shaped up, and it was late before I set my plants out, and had but little fruit this season, but enough to indicate what can be done here. The Dr. Warder especially behaved finely, and I think is one of our best market berries. Fruit of fair size, very solid, good flavor, and colors up sometime before it is ripe, giving the market man nearly a week in which to handle them; if he is crowded, can wait on him, if he lacks a few quarts to fill his crates, or wait on him to ripen, as he pleases. I have known this variety to bring treble the price of the Wilson, as they come in just as the Wilson is gone, and berries are generally scarce and high. My Raspberry plant was cut short to save freight, and being late planted I did not expect any fruit; but they surprised me, as every variety I had produced some fruit, except Grey and a few other new varieties. The Golden Cap is the first in order, ripening here the 28th of May; is one of our best amateur berries. The Nesho Black Cap is very common here, and does very well in size and color; resembles the Doolittle, but hardly so good, I think; comes in just after the Golden Cap. The Philadelphia is doing fine here, and

so is the Parnell, Kirtland, Mammoth Cluster and Thurston. The latter is the largest and most productive Raspberry I have ever yet seen.

THE EARLY PEACHES IN KANSAS THIS YEAR.

BY H. E. VANDEMAN, GENEVA, KANSAS.

This is the eleventh day of July, and the last of Hale's Early is just gathered. The season seems to be about four weeks earlier than is usual. The whole list of early peaches known to the public, so far as fruited in Kansas this year, is surpassed in both earliness and size by at least fifty new seedlings of Kansas origin, many of which have borne their first fruit this year. It would be an arduous task, and would take too much space to give anything like detailed statements of those which I have seen. If I were to tell of all those heard from, it would be much more tedious; I will simply state concerning a few, leaving out details. It will also save space to say that all of these new seedlings are in shape, size and quality very much like Alexander, and either known, or supposed to be seedlings of Hale's Early.

On my own farm, in a neglected Peach nursery let grow for fuel, were about twenty seedlings that bore this year for the first time, and all ripening, good sound specimens on June 13th. The trees had not been cultivated for two years, and were crowded and shaded so badly that the fruit could not possibly attain its perfection. Specimens from these trees measured seven and a quarter inches. Alexander, three rods distant, on same kind of soil and with better care, did not exceed six inches in circumference. A friend, living two miles distant, had ten seedling trees in his orchard that bore their second crop this year, of like character with mine. C. C. Kelsey, of Humboldt, wrote me that he had five seedling trees of the same description of fruit, bearing this year for the first. Simon Bucher, twelve miles south-east from Emporia, has also found among his nursery seedlings some twenty-five trees, all of like character. Mrs. Louisa Burns, near Emporia, has one seedling tree much like the rest.

Geo. L. Kroh, of Wyandotte County, has a new seedling ripe June 20th. I could give the names of a dozen more persons originating from one to three trees of a similar character, the fruit of which I have seen or heard of upon good authority. As to the well-known early

Peaches, it seems hardly worth while to mention them, only for comparison, except the Alexander. This variety is the best and earliest of those generally disseminated and fruited. Wilder, Saunders, Downing and Musser have not yet fruited. Amsden proves generally small and so very inferior in flavor that we deem it no longer worthy of propagation. It did not ripen here until June 20th, which was some five days later than Alexander. Early Beatrice, ripe June 25th. A good little Peach that will bear shipping well, but too small and late to be worth planting where we have so many better newer sorts. Early Louise was ripe June 30th. Rich in quality, but too soft and dull-colored to meet with favor except at home. Hale's Early have nearly all rotted because of the wet weather. It is a favorable sign for these new seedlings that but few of them seem liable to rot, as does their parent the Hale's. We propose to give these seedlings a chance to show what they are, and we really expect something better than is now propagated. Some few are named, but the number is so large and increasing so fast that it seems probable that it is yet hardly best to name and disseminate. In a few years we will perhaps have seedlings from these early kinds that will surpass what we now have.

It seems a strange thing that all at once, in so many places, there should spring up so many extremely early Peaches. But Kansas far out-reaches all other States in both number and season.

EDITORIAL NOTES.

ENGLISH IMPORTATIONS OF FRUIT.—The prevalent impression among the people of this country is that the skilled gardeners of England are enabled, by forcing and careful treatment, to supply most of the fruit required in their country. But, we learn from a London paper that large quantities are imported almost daily from the continent; many tons of Strawberries and Cherries being shipped at Havre, St. Malo and Honfleur, on board the steamers to Southampton, whence they are sent by train to London. Judging from this, the continent of Europe bears the same relation to England, that Florida does to us in supplying early fruit.

COAL TAR ON FRUIT TREES.—We often see the most absurd notions attributed to the editor of the GARDENER'S MONTHLY, and have come

to look at such things as matters of course. In traveling around, little changes occur, and from one to another the little changes become great, till, with even the most perfect faith in an overruling Providence, we have little regard for the "truths of history." Our good friend, Marshall P. Wilder, does not take to those troubles quite so patiently, as witness the following from the *Massachusetts Ploughman*:

"In the *Ploughman*, of May 4th, a writer signing himself J. L. B., states that he used coal tar on fruit trees to protect them from the ravages of mice, by the recommendation of Marshall P. Wilder, and thereby destroyed or injured his fruit trees. I never gave such advice, nor should I have used tar of any kind without first wrapping the tree in cloth or other material so that the tar might not come in contact with the bark of the tree. MARSHALL P. WILDER."

CULTURE OF ORCHARD TREES.—MR. T. T. Lyon, a well-known and an excellent Western fruit grower, and who was one of the pomological judges at the Centennial, gives some good advice in the *Rural New Yorker* on the management of orchards during the summer. He shows how the common recommendation of mulching orchard trees during summer cannot be so good as stirring the surface soil, and we quite agree with him. We have always regarded "mulching" orchards, on any very extensive plan, as impracticable, and never saw any large orchard so treated. On these large plans we regard the choice to be, first, between giving up the ground wholly to the trees and keeping the surface stirred by the cultivator, in order to pulverize the soil and keep down weeds. Secondly, ploughing up and growing vegetables, fruits, or grain among the trees. Thirdly, cultivating grass in the orchard for hay, or pasturing it with hogs or cattle. Mulching for large orchards, we regard as one of the things out of all calculation in profitable fruit growing.

SCRAPS AND QUERIES.

THE BURNS PEACH.—Mr. Downing writes that he did not intend to convey a positive opinion that the Burns and the Alexander were the same, but only that he had been *informed* that they were the same.

THE HORNET RASPBERRY.—A Massachusetts correspondent informs us that the largest

and best berries ever seen at the meetings of Massachusetts, were there recently, of this variety. One kind, probably the Belle de Fontenay, has been doing duty for this sterling kind on some occasions.

THOMSON'S ORANGE PEACH.—On the 26th of July we received from C. W. Westbrook & Co., Wilson, N. C., a specimen of the above named Peach. It is quite a good sized Peach for an early one, but is under the middle size of late Peaches. It has a beautiful color, somewhat like a golden Apricot, is free-stoned, and has a very good sub-acid flavor. It is the earliest yellow Peach we know, and on the whole is a variety of good promise.

GUMBO.—In a notice of Okra, our good neighbor, the *American Agriculturist*, which, by the way, we are glad to find as interesting as ever under its new management, says:

"Though in the catalogues, the plant is called 'Okra, or Gumbo,' the name Gumbo properly belongs to the dish prepared from the pods, rather than to the plant itself, as the Southern cooks make Gumbo without the use of Okra, but substitute the pith and young leaves of *Sassafras*, one of the native violets, and perhaps other plants."

Our impression is that Okra is the substitute for the *Sassafras*, and not the *Sassafras* for the Gumbo. As we are not sure about this, however, we call attention to it so as to get at the "bottom facts" by those who are in the secret.

MOWING THE LEAVES OF STRAWBERRIES.—W. H. W., Reading, Mass., asks: "Will you please state in the *GARDENER'S MONTHLY* for August, if possible, your opinion about the wisdom of cutting off the leaves of Strawberry plants after the crop has been gathered?"

[We have occasionally very good results indeed, especially in the cases of shy bearing kinds, or varieties that ought to bear well but do not. It is a question that cannot be decided by rule. We fancy the tendency of the practice is to increase productiveness at the expense of size.—ED. G. M.]

INSECTS ON THE GRAPE VINE.—S. P., Newport, R. I., writes: "I send by mail, with this letter, a small box containing a portion of Grape vine root. You will find, by applying the glass to it, it is covered with small yellowish-green insects, which feed on the same, as you see by the piece of root sent, till they kill the root outright. In the Spring they come out of the ground in

large quantities and last for several weeks, when they die away again, and I suppose lay their eggs for the crop of the future. They do not seem to injure the foliage at all while in the bug form, but through the day are constantly flying against the glass; they have now disappeared about ten days. On examining the roots to-day I find a great many killed and many full of the insects like the root sent you in a small piece of paper in the box. Are any of the bugs in their full grown state? Is this what is called the Phylloxera or not? Do you think a strong solution of tobacco water would be injurious to the vines? If not, I think where they could be reached with it, it would kill them while in this state. Please advise me what is best to do, and oblige."

[There was a large quantity of Phylloxera on these roots and a small beetle in addition. We sent the box to a prominent coleopterist on account of these beetles, but he evidently overlooked them, as he reported "nothing but phylloxera." Please send some more sometime. We never saw roots eaten out by a beetle as these were. Perhaps the tobacco might do. Try, and report.—ED. G. M.]

SEEDLING GOOSEBERRY.—C.P., Beaver Dam, Wis., says: "I send you by this mail a specimen of a valuable Gooseberry, claimed to be a seedling raised in Vermont and brought to Wiscon-

sin about twelve years since, but the originator had persistently refused to let so much as a cutting go out of his hands, but after his death, one year ago, I purchased the entire stock from his widow, and now find on their bearing that I have several varieties, some of them worthless, some fair specimens, this, however, is the best and largest of the kinds. I had noticed this one carefully for several years, while in the hands of the originator, and never discovered any signs of mildew on it, while all the English varieties thus far tested have mildewed more or less every year, so I conclude this must be an American seedling. Please give me your opinion. I regret that the berries are not ripe, but the probability is if not sent at this stage of growth they would not be sent at all, as we are tormented with fruit thieves so that it is very difficult to get a specimen of any new or valuable fruit left until fully ripe."

[These are of the English race of Gooseberries, and, as we said of Mr. Rowe's seedling, if it continues free of mildew it will be a valuable addition. All experience so far has been against the English Gooseberry and in favor of the American in resisting mildew. Now and then when an English kind finds its roots in a cool place it does very well. It is by no means unusual to see occasional plants of English Gooseberry free of mildew.]

FORESTRY.

COMMUNICATIONS.

FELLING TREES.

BY MARGID DIGRAM, PHILADELPHIA, PA.

As the cutting down and the removal of trees are as much the work of the forester as their planting, and the after care of their growth, I thought the following remarks regarding an idea suggested during a trip West six months ago, might be a legitimate contribution to your department of Forestry.

In many cases, very especially where the ground on which the forest stands is needed for tillage, or for growing the ordinary crops of the farm, it is desirable not only to remove the trunk of the tree with the foliage which shades the ground, but also the stump which, if left, stands

in the way of the plough and harrow and so causes much loss of time in passing around it. There are patented articles for extracting the stump after the trunk has been cut away, but the employment of which requires considerable outlay either in their purchase, or hire, or in pay of men skilled in their use.

What I here propose calls for nothing in addition to the woodman's axe excepting one or more lengths of stout rope. The tree in fact by my method lifts its own roots, the axeman's duty being simply to cut the diverging branches of the root. Whilst the cutting was being done, a rope would be attached to some point well up the trunk, by means of which the fall would be facilitated and a direction given to it. After the felling of the tree a large saw would make a clean separation of trunk and roots, and this

use of the saw instead of the axe would work an average saving of a lineal foot in each tree and a number of cubic feet where the tree was a large one. This process of removing trees is after Nature's own way, and I offer it as worthy of consideration on account of its economy both of time and product.

THE BYFIELD ELM.

BY JACOB W. MANNING, READING, MASS.

We measured the "Byfield Elm," on the land of Benjamin Parsons, Byfield Parish, Newbury, Mass. The tree is in sight of the cars as one goes to Newburyport, Mass., by Boston & Maine Railroad, some thirty miles from Boston. Mr. Parsons has authority to call the tree very near 100 years old. There is some decay on one side near the roots. Height of tree 100 feet; diameter or spread of branches 118 feet; circumference of trunk by line, three feet from ground, resting on the foremost ridges, twenty-seven feet; circumference at three feet from ground by pressing the line into the depressions between what may be called buttresses, forty-two feet; around the waist, at six feet from ground, seventeen and three-quarter feet; by estimation, at twelve feet, where the branches shoulder out, thirty feet.

I do not know of an Elm in this part of the State of Massachusetts equal to this, but there are very many that rank well as to size and some far excel it in age. I think few Elms live much over 100 years without showing some signs of decay. Doubtless many would remain healthy much longer here if not for the fact that they get broken by winds in Summer when in leaf and in Winter by ice.

The different forms the American Elm assumes is a feature of note. Some have immense trunks and comparatively little top as compared with the Byfield Elm. It must have fifteen cords or more of cord wood, or even twenty cords if root and all could be sawed to four feet cross-ties. Seedling trees from such patriarchs ought to command ready sale, but like live stock or fruits, soil and culture are elements of success.

Accounts of big trees coming from the Eastern coast look tame by the side of facts from the Western coast, but local pride is something to date from. Mt. Washington, in our native State, is not the largest sort of an elevation, but is the best we can show, and many go to see it.

EDITORIAL NOTES.

TREE PLANTING IN SWITZERLAND.—It is the custom in parts of Switzerland to plant a tree on family holidays, such as a marriage, &c., the friends of the family usually furnishing and planting the tree. The work is often accompanied with a great deal of parade, the relatives joining in procession. Music and congratulatory speeches make a part of the performance.—*The Journal of Forestry*.

THE EUCALYPTUS IN MEMPHIS.—We see by the *Avalanche*, of Memphis, that those who want other people to plant Eucalyptus forests instead of themselves, are having a warm time in that part of the world as well as elsewhere. The discussion has brought out Mr. Stewart, the well-known nurseryman of that place, who tells his neighbors that he planted a lot out in 1877. They grew twelve feet during the season, but were destroyed by the same white frost that killed the sweet potatoes. A prominent seedsman tells us that the amount of Eucalyptus seed he sells is astonishing. At first he wrote and told the inquirers that they might as well plant forests of cocoa nuts in our country as this, but it was looked on as a "trade excuse for not keeping the seed." So he now sells to whoever orders it, giving only the information about its Australian character when any one asks the question.

SCRAPS AND QUERIES.

FOREST CORPORATIONS.—H. J. S. writes: "I understand you to advocate the planting of forests by corporations. I would now ask you to project, first, a working plan for such companies adapted to the capacity of country neighborhoods; to indicate, second, what legislation, if any, is essential and desirable for such corporations; third, what locations and aspects are the most favorable; fourth, what habitats are well adapted to the various species; and fifth, such other information as may best promote the commercial success of such companies. First. Corporate enterprises for conducting agricultural enterprises are, if not unknown, at least unusual, and this because agriculture demands the closest vigilance and the most painful economy. Corporation silviculture may have different elements, but at least it could be best managed by neighbors, whose vicinage, sympathies and in-

terest would protect the plantations, and whose labor would be given at a minimum cost. In Philadelphia the building associations have learned and taught how to aggregate small savings of money, and demonstrated the potentiality of "many nickles" laid by to enrich the mechanic. The farmer, though he has little money, yet has many spare hours, which if he could spend them on the company's forest, might grow into money. If a wise plan were digested for local forest companies, they would likely become sporadic, and idleness of five, twenty or one hundred or more acres might come to be devoted to forest culture of such timber as would be more remunerative. In some places it might be railroad ties, in others fence timber, in others slow growing or ornamental woods might prove the only ones worth the cost of transportation to market. Economy of administration has been, in building associations, a vital element of success, and this would be especially true of forest companies, where interest and compound interest would enter so largely into the calculation. Each township, I imagine, might find a field for one or more such companies, and each Grange or Farmer's Club serve as a nucleus for such organizations. Second. The Pennsylvania Legislature has passed some laws promotive of building associations, and perhaps our laws even now afford all the facility for forest companies that is necessary. Third. Dr. Rothwick indicates the grounds where charcoal has been burned as especially favorable, but all our counties, or even townships afford ample opportunities for selection of favorable locations."

[The paper referred to by our correspondent, by the editor of this magazine, on forestry companies, appeared in the *Penn Monthly* for 1876. It is gratifying that our correspondent refers to it, as from the fact that no allusion whatever is made to it in the recent collections of forestry topics presented as a report to the Government, by Dr. Hough, it might fairly be interpreted by those who missed it there as being beneath all notice.

In that paper it was shown that forestry companies promised as much profit when properly conducted as any well managed corporation. The paper is too long to transfer to our pages, or we would ask permission of the *Penn Monthly* to do so; but presuming that all who are particularly interested in the subject have seen or can see the article there, we will here merely note our correspondent's numbered questions.

First. The land would have to be purchased in just the same manner as a body of men would associate together to buy land to farm, to build houses, start a cemetery, or even lay a railroad track. Of course the estimated cost of the planting and care till returns were made would be with the land purchase, part of the capital stock, but the shares would be made to cover these contingencies, and only installments called for as required. The chief concern would be for a live president, for on him the selection of superintendent would fall, and on his good management much of the success, as it does in all companies, would depend.

Second. It does not appear that any legislation more than the general association laws of the Commonwealth of Pennsylvania, and probably such other States, already furnish is necessary. Trees are agricultural products, and have the same protection, and the same general encouragement as agricultural products already have. The culture of trees for timber, needs no more legislation than the culture of trees by a nurseryman for sale, and the A. B. C. Company, Limited, has been found quite equal to the purpose.

Third. Locations and aspects depend entirely on the nature of the prospective market. If it were foreseen that there would be a demand for Cypress shingles, the location might be a Mississippi swamp; if fire wood for a locomotive away from coal mines, it might be the Table Mountain Pine on a Western Kansas desert; if Oak ties, it would be a rich alluvial tract along a main line for the White Oak; a rocky ridge for the Chestnut, and so on through the whole range of objects and spots.

Fourth. There is not a tract of land in the Union that would not grow some tree well, and probably no one tree but has its uses. The exact answer could only be given by the superintendent of a forestry company when the details were being arranged. There are plenty of places where it would be folly to plant the Oak, though the best of timber; plenty of places where Poplar or Willow would pay better than anything else. It will depend on whether we have cricket bats or punch bowls, or railroad ties or bridge piles as likely to be most called for.

Small local companies would not effect much. The owners of a large timber plantation should be men who can see just where there certainly will be a demand for timber in the future, and where the land on which the timber stands will increase in value while the timber grows. There

are now in the country, millions of acres of timber not worth five dollars an acre, because it is inaccessible to railroad lines, to water navigation, or to where timber is wanted, and it will be so for a hundred years to come. There are Oak and Chestnut forest not twenty miles from Philadelphia now, which one could hardly get cut down by a gift of the timber, because it cannot be hauled as cheaply as a railroad or a river will bring it a hundred miles away. The average collection of farmers would not have a breadth of view sufficient to look into a principle like this. The same broad-viewed men that project railroads and similar enterprises are the only ones who could successfully make a forestry company pay. There would be little compound interest to be borne in a properly managed forestry company. If the ground is properly chosen, the proper market kept in view, and the proper superintendent selected, the whole running expenses could be met from the products in four years.

The point second has already been answered, No legislation is needed. The recent Pennsylvania legislation in the interest (?) of building associations will not promote but obstruct building associations. Germantown, with perhaps 30,000 inhabitants, has had building associations with an annual deposit line in banks of some \$500,000, and never asked for "legislation," nor can any legislation possible "promote" it better than it has been promoted for half a century without it.

In short there is no more reason why a forestry association should not be as profitable as a railroad. The longer a railroad lasts the more people settle along its line, and the more valuable the land along the line grows. A forestry company would find the same facts, with this in its favor, that while the road-bed and rolling-stock continually depreciates by time, trees increase in value as they grow.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

A MURDEROUS PLANT—DARLINGTONIA CALIFORNICA.

BY J. G. LEMMON, TO THE CALIFORNIA ACADEMY OF SCIENCES.

(Continued from page 245.)

INFANT FORM OF LEAF.

The plumule first develops a thin, flat, falcate, green leaf, about half an inch long. Soon it becomes reddened, tubular and veiny, while a relatively large opening appears at about two-thirds of its length, beyond which extends, curving inward, the slender, dorsally flattened crimson, naked midrib, representing the true leaf, of which the tube below is the petiole. Along the inner face of the petiole, a broad wing extends from the lower edge of the inclined orifice, down straight to the collar of the root, where it divides and clasps the stock. This primary leaf is constructed similarly to those of the related *Sarracenia* except that in the latter genus the true leaf or lamina is short, broad, and is bilobed, or many lobed, and forming a border nearly around the mouth of the pitcher-like petiole. During the first season four of these simple *Sarracenia*-like leaves appear of equal size generally,

apparently in a whorl, but inspection reveals their alternate arrangement. All face inward, or rather upward, as the leaves first push out horizontally, then ascend upward. The uncovered opening is favorably presented for the reception of moisture, insects, or any objects obeying the law of gravitation. Also, the mouth parts and interior of the tube are armed with strong hairs, pointing inward, while inspection of the contents reveal minute insects (generally of the *Ichneumonidae* and *Tinnæi* families) entrapped, drowned in water and being digested by these tiny rogues, thus early playing their little game.

THE TRUE DARLINGTONIA LEAF.

During the second year the creeping, rhizomatic character of the plant is manifested; also, it increases rapidly in size. The whorl of leaves now produced, from one-half an inch to several inches beyond the first whorl, are long and large, two to three inches long by half an inch wide, the whole striated with longitudinal veins, and colored with yellow and crimson. Often, too, the other kind of leaves make their appearance, forming one or more of the first members of the whorl. So very different are they at the very beginning that it seems impossible that both

forms should be found on the same plant. They may be larger or smaller than the infantile form (often but half an inch long,) but still they will be perfect types of the true *Darlingtonia* leaf—the twisted petiole, the swelling, light-admitting hood, the small, round aperture facing downward, the enormous, depending, curling, flaring, and, in the season, honey-smeared, two-parted lamina or true leaf.

The fourth year's leaves and all subsequent are all of the vaulted, big-mustached form—the plant is of age, is mature; but occasionally on offsets and runners from weak plants at any age, the infant form of leaf is found, but no graded, transitional stages have yet been detected, though much research has been applied in this particular direction, as bearing upon the popular theory of evolution. The linear, strict petiole, with upturned mouth and long, naked, midrib, always accompanies the infant form, while the adult leaf is never deficient in the least characteristic feature of its wondrous organism.

I should have noted before, the manner of vernal or budding. In the bud, the petioles of both kinds of leaves first take form and extension. The midrib of the infant is but a minute, subulate spur; the future mustache of the adult form is a pair of involuted, close-rolled awl-shaped horns, not unlike those waxen pilose appendages which the incipient dandy sometimes displays beneath his nose.

THE SACCHARINE SECRETION.

Not at all times of the season is a prominent characteristic observable. For several years I did not detect one of the most distinctive features of this insect trap, the saccharine secretion. This phenomenon was not certainly known for several years after the discovery of the plant. On the 4th of July, '75, in company with Mrs. Austin and family, I went to celebrate the nation's holiday beside our peculiarly Californian curiosity, located in a large, oval bog in the center of a grove of alders. Much to our surprise, the tall, crowded cobra heads, upreared among snowy *Parnassias*, azure *Erigerons*, yellow *Narthecciums* and purple asters appeared, dripping with glistening drops of honey. The catching operation was in full progress.

This saccharine fluid, of the consistence of honey, is secreted by glands of the hood, both without and within, standing in beads along the margins of the expanded cells, the translucent windows of the balloon-like hood. It is often so abundant as to unite and flow down, that on

the inside into the forward, depressed part of the hood, that on the outside smearing the mustaches completely, in addition to a similar secretion of the latter. Not only was the curling, crimson-streaked mustache smeared throughout, but the border of the wing in its spiral curve half-round down to the root was gemmed with a line of honey globules. These globules in the oldest leaves were crystallized into sugar-plums, forming a not-to-be resisted decoy to the groundling below.

(To be Continued.)

CROSS-FERTILIZATION IN *SABBATIA ANULARIS*.

BY LESTER F. WARD, WASHINGTON, D. C.

This handsome flower, which is quite common in the vicinity of Washington, and which blooms about the end of July, presents a device for the prevention of self-fertilization, which has not, it is believed, been met with in any other species of plant, and so far as I am aware, has not yet been described.

The flower has five stamens with elongated, introrse anthers, which are abruptly curved outward near the summit, and a single style about the length of the stamens terminated by a forked stigmatic portion nearly as much longer. These branches of the style which are stigmatic on the inside are at first closely twisted together in such a manner as to conceal the stigmatic surfaces. Later they untwist and present a simply bifurcate appearance, but this does not take place until the anthers have shed most of their pollen, by which the advantages of dichogamy are in a measure secured, the pollen of the later flowers being conveyed by insects to the stigmas of earlier ones. But in addition to this, the style is in all cases found to be abruptly bent at the base, so as to form an angle of from forty-five to ninety degrees with the perpendicular, carrying the stigmas entirely away from the stamens, and usually locating them between the lobes of the corolla. And as if this were not enough, the stamens also are found in a great majority of cases to be bent in the opposite direction, so as to lean more or less conspicuously away from the center, while in many of the flowers the filaments lie flat down upon the floral envelopes, the style at the same time occupying a horizontal position on the other side. At a later stage, and after fertilization has been effected, both the stamens and the style partially or completely regain the erect position.

CROSSING AND HYBRIDIZING.

BY TH. GREGG, HAMILTON, ILL.

The subject of hybridization and other crossing has ever been an interesting one to me; hence I read Mr. Miner's article on hybrid Strawberries in the July issue of the *GARDENER'S MONTHLY*, and the editorial comments thereon with much attention. But if Webster's definition of the term be the true one, then I judge there can be no such thing as a hybrid Strawberry, a hybrid Peach, or a hybrid Cherry. He says a hybrid is a cross between two *species*, as a mule—which is a new species. A cross between two varieties of the same species is not a hybrid. A cross, no matter how produced, between two varieties of Strawberry, or any other fruit, produces not a hybrid, but a new variety of the same species. Hence, your conclusion that a cross between *Fragaria vesca* and *F. Virginiana* would be a hybrid, can hardly be correct, as it would still be possessed of all the characteristics of a Strawberry. A cross between a Strawberry and a Raspberry would be a proper hybrid; but it would be neither a Strawberry nor a Raspberry, but a new species to be called by some other name. Hence, Mr. Miner may well conclude that we have no *hybrid* Strawberries.

But all productions from the seed of fruits, it may be safe to affirm, are crosses, and therefore new varieties, differing more or less from the parents. Holy Writ mentions "the fruit tree yielding fruit *after its kind*," at the creation. Doubtless such was the case then, and would be now under similar circumstances. But the variations of soil, climate and circumstance, have produced numberless corresponding changes in production; and the means of cross-fertilization have become so numerous and universal, that such result can now scarcely be possible.

Hybridization proper, is a process of but rare occurrence. I believe it is supposed that the Apricot is a hybrid between the Plum and the Peach. However that may be, it has a strong resemblance, both in wood and fruit to each. Whether art can ever be brought to aid nature in this direction, so as to bring about any beneficial results, may be regarded as doubtful. Yet in these days of wonders, such a result is possible. We know little yet of nature or of nature's laws.

But I look to the crossing of varieties as the means by which great results are to be obtained, not only in the fruit and floral kingdoms, but in the animal and the human as well. It cannot be

denied that the stock-growers have made more progress in this direction, than we horticulturists have made.

I close by urging horticulturists of all classes, and especially the young, to press forward in this interesting branch of study and experiment. Rivers, Kirtland, and others, have achieved great things; much yet remains to be done. Perfection may never be reached. When it is, the millenium is at hand. But the progress toward it will be eternal.

[Our correspondent confuses species with genus. A hybrid between a Strawberry (*Fragaria*) and a Raspberry (*Rubus*) would be an intermixture of two *genera*. There are instances of two supposed genera intermixing, but such occurrences among plants are so rare, that if this were all that was meant by a "hybrid," the term would never be used. An intermixture between *Fragaria vesca* and *F. Virginiana*, two species, would be a hybrid: an intermixture between Albany Seedling Strawberry and the Downing Strawberry would be a cross; and the progeny from the Downing or any other kind, differing from its parent, without the intervention of any other pollen but its own, would be a variety. It is safe to say that the Apricot did not originate between the Plum and the Peach. ED. G. M.]

EDITORIAL NOTES.

FUNGUS SPAWN.—Recently we noted where the spawn of a fungus had evidently been communicated from a lot of leaves from a wood to a lot of Rhododendrons, destroying large numbers of them. The same appears to have been noted in England in regard to other plants, as appears from the following from the pen of the Rev. J. M. Berkeley, in the *Gardener's Chronicle*: "The attention of cultivators cannot be called too often to the danger of supplying mould to trees in orchard-houses or hothouses. The white mycelium, which in such cases are found between the wood and bark, belongs to one of the higher fungi, and not to those parasites which affect leaves. Still it is quite true that these are often propagated by means of the soil, and for this reason it is recommended to gather and burn the leaves. This is notoriously true in the case of several of the fungi which attack cereals, and Lévillé has shown that it is equally true of some of the yellow parasites; and so it is very probably true of the parasite

affecting Peach leaves, which is *Lecythea pruni*, Lév., a species which is noticed in *Gardeners' Chronicle*, 1864, under the name of *Uredo Castagnei*, M., but which does not seem to have been inserted in any list of British species. It is probably of exotic origin, for we have specimens from Port Louis, gathered by the late Mr. Ayers, and from Italy by Passerini, under the name of *Uromyces prunorum*, Fuckel. It was also sent from Valparaiso by Bridges, and Mr. Salway gathered it in Madeira. As regards the supposed fungus on Pear leaves, sent us by Mr. Sheppard, it is not a fungus but the work of a minute *Acarus*, allied to that which is so destructive to Black Currants."

SCRAPS AND QUERIES.

ANTS ON GERANIUM ROOTS.—It is not often that ants are found destructive to living plants, but we have the following note from Mr. Lorin Blodgett:

"This Geranium-eating white ant is a great pest. I send a stem of another plant I cut up this morning, also the foot of the Pine stake, which is also eaten through, in the regular fashion of the white ants. This is the stake holding the plant when bought (I do not recollect from whom) in the pot. I have now lost four plants, this last not being all eaten out but girdled at the root and hollowed out on one of the branches above. I hope to get your description of the ant or animal, whatever the name or origin."

These were submitted to Rev. Dr. Henry McCook, of Philadelphia, our highest authority on these questions, who has kindly responded in the following letter:

"The specimens from the plants of Mr. Blodgett are dead and very much decayed, but from the most perfect one, I have no hesitation in determining it to be not a new species, as you

conjecture, but our common *Termes flavipes*. This insect abounds everywhere in our vicinity. I have traced them by myriads. Some time last Winter I made a statement concerning these insects before the Academy, and exhibited the specimens of their work from my collection of insect architecture. They were taken from the fence of a gentleman in Delaware County. The surface of the wood was literally riddled by the termites. They love decayed wood, under which they nest and on which they feed. They also live under stones. They have not been of great damage here as yet, but the possibility of such an increase of the insects as to make them, as Mr. Blodgett says, "a pest," is at least worth thinking about. Mr. Hagen (Howard) has a fine paper on them in, I think, the *American Naturalist*, of about a year ago, or more. Dr. Leidy has recently made some most interesting discoveries of the parasite life within their abdomens—a wonderful revelation. *Termes flavipes* is not a true ant, but belongs to the *Neuroptera*."

DOUBLE LILIUM CANDIDUM.—W. N. M., Oswego, N. Y., writes: "I trust you will excuse me for troubling you again, but it seems as if I was having more than my share of curious freaks of flowers. I send you by this mail a double *Lilium Candidum* which has appeared in my *Candidum* bed, containing about three hundred plants. The plant is vigorous, and there are ten double flowers on the spikes, giving it a decided *Tuberosa* appearance. This flower I send is a fair sample. It leaves me in good form, and is white; I trust it will reach you perfect."

[This is a very interesting freak. It is not double in the usual sense of double flowers, but a simple mass of white leaves terminating the stalk, the leaves scattered closely along about one inch of stalk. And yet it shows how closely leaves and flowers are allied in nature when leaves can be made to look like white petals.—Ed.G.M.]

LITERATURE, TRAVELS AND PERSONAL NOTES.

EDITORIAL NOTES.

ANNUAL REPORT OF FAIRMOUNT PARK, PHILADELPHIA.—There have been "reports" of Fairmount Park before, but we believe none have been issued for some time, at any rate none since the Park began to assume the hopeful prospect of a creditable reputation it has presented of late

years. This immense tract of over 2000 acres is beautiful by nature, and for a long time there was a prevalent impression that it needed no art to make it a garden. It was thus wholly in the hands of engineers whose whole efforts were devoted to making roads, to levelling and filling up, and a vast deal of other work which destroyed rather than aided the beauties they were

intended to develop. Some of the commissioners were gentlemen of taste and culture, and eminent in many walks of life, but with very few exceptions were not distinguished for any gardening knowledge, and these few were so surrounded by difficulties and opposed by obstructions that those who knew of these troubles had little hope of the Park ever coming to anything of great credit, as a real instructive park for the people. Those who knew nothing of these difficulties would visit the Park and wonder naturally at the costly absurdities. But very little help has been given to the better portion of the commission and of city councils, who, against all sorts of discouraging difficulties, have held on courageously in the determination to do what they could for the best, though they could do but little they desired. The writer of this happens to know of the immense services to the citizens of Philadelphia and those of other places who visited this beautiful Park made by the late James H. Castle and by Ex-Mayor McMichael, Hon. John Welsh, and Hon. Eli K. Price, the president of the Select Council, George A. Smith, and of Common Council, Joseph L. Caven, intelligent gentlemen, and also of the Commission by virtue of their offices, have all done good service. No doubt others of the Commission have done as faithful service, but the writer is referring to only what has been a matter of personal observation.

As we have noted, very few persons have an idea how tremendous are the obstacles in the way of superior management in a place like Fairmount Park. There are about one hundred and fifty members of councils, a large number of prominent city officers, and an immense number of powerful citizens, who know and feel that they have "rights" in the management besides those who are nominally responsible, and having rights they dare maintain them. It is impossible for those working out the Park problem to ignore these various powers; it would be stupid, nay, absurd to do it. The only thing to be done is the best they can. Instead of complaining at what has not been done, or badly done, it is to us a matter of surprise that so much is so well done, and the present condition of the Park must be very gratifying to those who have "lived and hoped" so long.

Without expressing any opinion on the earlier management, it is evident that the appointment of Mr. Russell Thayer to the position of chief superintendent was a good starting point. With

excellent practical judgment and good sense, his ambition is to excel in his own special department. Another excellent stroke of policy was the appointment of Mr. Charles H. Miller as consulting landscape gardener. Few persons in the horticultural community unite practical knowledge of details with a cultivated taste in art better than he. Then the inauguration of the Park lectures on botany and arboriculture by the trustees of the Michaux Fund, by Professor J. T. Rothrock, of the Pennsylvania University, was another capital move in the right direction, and as all these gentlemen seem to have the happy faculty of pleasing their many hundreds of "masters," and of working harmoniously among themselves, there is a hope that in Fairmount Park we may not only have a garden of which the humblest and the wealthiest in Philadelphia may be proud, but one which in the long run may have some such national reputation as Kew has acquired for England. Of course one city can hardly be expected to do what a powerful nation has done, but if there is a reasonable surety that something near what donors might wish would be carried out, private merchant princes might do what hereditary ones have done.

Turning to this report one cannot but feel that in spite of all the natural difficulties of the situation, things are working tolerably well, and we have more encouragement than ever before that Fairmount Park will be something more than an expensive toy.

TYPOGRAPHICAL ERRORS.—A critical cotemporary, which goes on the bank rule of "no errors corrected at this counter," but loves to amuse itself with the errors of others, tells its readers that one lately deceased was "widely known, and much repented." It is clear we cannot all be perfect, indeed it is doubtful whether the saving grace is very widely distributed. Noah's ark did not hold many, and evidently our friend was not one of the party.

LARGE ASPARAGUS.—Mr. Robinson will no doubt be surprised to learn that somebody stretched out his prize Asparagus, page 239, August number, from three to fifteen inches. We can beat Asparagus when it is but three inches round, but fifteen is scarcely to be found anywhere out of a printing office.

A "DAY" IN CALIFORNIA.—We have before us an account of a California invention, a transplanter "patent rights in every State for sale." The inventor says:

"Some three years ago I commenced to set out some 200 acres of Eucalyptus trees. I raised the plants and put them in boxes 20x24, setting them two inches apart—the usual plan. To set them out in the field, and not irrigate, and do the work rapidly, was the question. The result was this transplanter. With it, one man will take the boxes of plants and set out 600 to 1,000 trees per day, nine feet apart. I set out over 100,000 plants, and not one plant in 100 will die from transplanting."

The way it is done is thus described: "The transplanter is first used to cut a hole in the ground or in a box of dirt, where you want to set the plant. Next the transplanter is set down over the plant so that the top of the plant runs up inside of the inside cylinder. The outer cylinder then pressed down into the ground, giving it a slight rotary motion, until you have cut to the depth desired, generally two or four inches. In pressing down on the handles, care must be taken to keep the hands off from the inside cylinder, which must be left loose so as to move freely. The rotary motion gives a sharp drawing cut. After cutting down around the plant to the depth desired, lift the transplanter out of the ground. It will bring up the plant with a solid plug of earth inside the cylinder. Now put the transplanter containing the plant into the hole in the ground (or box) first cut. Set it down to the bottom of the hole so that the bottom of the plug of earth rests on the bottom of the hole; place the two thumbs on top of the inside cylinder, retaining the hold on the handles with the fingers, and close the hand, thus drawing up the outside cylinder while the inside cylinder thus holds the plug of dirt in the hole. The plug of dirt is thus forced out of the transplanter as the wad is forced out of a pop-gun. When this is done, the plant with a solid plug of earth will be left in a hole surrounded by unmoved dirt. Pour a trifle of water around the plant, which runs loose earth into the little crevices around the plug, and the work is completed. After a few experiments the work can be performed with great rapidity."

Plants two inches apart, and boxes twenty by twenty-four gives us one hundred plants to the box, ten boxes to a day's work. These plants are set out nine feet apart on a piece of ground, say near two miles long. The boxes must be set down to begin with, one about every one thousand feet apart to be ready for the "trans-

planter." Going to set the boxes would, in this part of the world, use up a good hour, even with the help of a horse and wagon, and some little time to put the wagon away. Then when we begin to use the box, and set the plant nine feet off, and the next one eighteen feet and the next twenty-seven, we have to run back and forth to the box a considerable number of times, or else pick up that box every time and chuck it nine feet, besides hauling our "transplanter" along. At any rate, it is safe to say that the time spent in connecting the box of plants with each hole is equivalent to lifting the box, carrying it nine feet and putting it down again. We will give half a minute for this, though it is doubtful whether this could be continuously done at this rate, but if it could it takes nine hours for the one thousand trees. Then for making the hole, ejecting the dirt, boring for the plant in the box, replacing it in the hole, treading it in, to say nothing of "pouring a trifle of water about it," will at least occupy a minute to each plant, and we have seventeen hours more. These figures, and they will be conceded to be very under-rate for the work done, will give us some idea of the great length of a day in California. They have the great Pears, the mammoth trees, and there is no reason why not the huge day for the huge Eucalyptus.

FOR FARMERS.—The daily papers have the following: "Ex-Governor R. W. Furnas, of Nebraska, has had to sell both his farm and his city residence. 'For sixteen long, long years,' he says, 'have I struggled to make these two homes. It was my ambition to have the largest and best orchard and nursery in the State, and I had just accomplished my aim; had just begun to reap the reward of my incessant labors, and now it is my misfortune to have it torn from me. I tell you candidly, next to the death of my children, this is the saddest affliction of my life.'"

We print this because we know the whole horticultural fraternity will sympathise with Gov. Furnas. There are few men who have pursued horticulture more intelligently, or whose personal character and reputation are more esteemed.

PROF. C. V. RILEY.—Those of us who know the great value of Prof. Riley's services to knowledge, are pleased to read the following compliment to him from the London *Gardener's Chronicle*:

"State Entomologists. If we were Americans

we should feel proud of having secured such a man as Professor Riley as entomologist to the Government Department of Agriculture. As Englishmen we congratulate our cousins on their judgment, and we look forward with confidence to the benefit that will accrue to tillers of the soil, of whatever country, and to the advance of science, that will accrue from this excellent appointment."

It might be well to observe for the information of our European friends, that Mr. Riley has all along been a State Entomologist, and that his position is now that of the *National* Entomologist, which is thirty-eight times higher than a State position.

T. B. MINER.—In a recent number we published a paper from the pen of this distinguished writer for the agricultural and horticultural press. We have had no notice of his death from his friends, all the knowledge of which we find in the enclosed newspaper paragraph:

"Mr. T. B. Miner, for many years publisher of *The Rural American*, with varying success at Clinton, Oneida Co., N. Y., and of late an occasional contributor for agricultural journals, died at his residence at Linden, N. J., June 5th, in the 70th year of his age. Mr. Miner was the author of works on bees and poultry, which enjoyed considerable popularity in their day."

BIBLE PLANTS, THEIR HISTORY.—Under this title we note, by advertisements in English publications, Mr. John Smith, the ex-curator of Kew gardens, has issued a little book, which is highly commended by the London newspaper press. There are few men better able to prepare a work of this kind, as familiarity with living plants in the Royal Gardens has given him an excellent opportunity to compare what have been thought to represent these ancient plants, with what has been reported about them.

VEGETATION ROUND CONSTANTINOPLE.—A long drive through the suburbs of Pera, and over the bare undulating downs separating the Golden Horn and Bosphorus, brought me, on the afternoon of my arrival, to the sweet waters of Europe, a pleasant valley at the head of the Golden Horn, with long reaches of quiet waters and pretty groves of trees, interspersed with a few handsome buildings, including one of the Sultan's numerous palaces, and environed by steep bare hills on all sides. *Leucocjum æstivum* formed large tufts in the bottom of the valley, and the hill slopes were covered with *Poterium spinosum*, one or two species of *Erica*, and seve-

ral *Ornithogalums*, and other bulbous plants. On the evening of the following day I availed myself of an invitation from my friend Mr. Millengen, of the Imperial Ottoman Bank, to visit Buyukdere, on the Bosphorus. The Judas tree, *Cercis Siliquastrum*, was in full Spring glory, its brilliant rosy-crimson flowers contrasting with the dull masses of Cypresses rising out of the almost continuous bordering of white marble palaces, barracks, and villages which line the Bosphorus on both shores. The hills between Buyukdere and the Black Sea, attaining a height of 500 or 600 feet, are, for the most part, covered with scrub of *Erica arborea*, *Cisti*, *Arbutus Andrachne* and several small evergreen and deciduous Oaks, with occasional patches of trees, including the *Velonia* Oak, Chestnut, Beech, Horse Chestnut, Plane, Poplars, Elm and Stone Pine; but there is no extent of wood till the Belgrad Forest is reached, a few miles inland on the European side. *Crocus pulchellus* is most abundant among the underwood, varying occasionally with white flowers; and Mr. Millengen informs me that a variety with double flowers is sometimes met with. The shady dingles running down to the Bosphorus abound with herbaceous and bulbous plants, including *Lilium martagon*, which here occurs within 100 feet of the sea level. *Fritilaria pontica*, several *Ornithogalums*, a *Geranium*, *Epimedium pubigerum*, *Helleborus orientalis*, *Hypericum calycinum*, *Colchicum byzantinum*, and several species of *Muscari* and *Bellevallias* also occur about Buyukdere.

On the slopes and summit of Chamlijah I found a second annulate *Crocus* out of flower, with narrow leaves, probably *C. biflorus*. This was accompanied by *Colchicum variegatum* and a very small *Iris*, with the habit of *Iris pumila*, but with much narrower leaves; also many leguminous plants, one or two *Ericas*, *Poterium spinosum*, *Muscari*, *Ornithogalums*, and other bulbous plants. The public garden of Pera is of very limited extent and poor in arrangement and detail, but the standard Roses were exceptionally fine. Small Plane trees planted in winding avenues are extensively used, and yellow Banksian Rose intermixed with *Wistaria* had a remarkably good effect. *Ligustrum Japonicum* is planted in masses bordered with *Yuccas*. The Loquat, *Wellingtonia gigantea*, and *Cedrus Deodara* also thrive, but the attempt at flower gardening everywhere is poor in the extreme.—G. Maw, in "*Transactions of the Botanical Society of Edinburgh*."

HORTICULTURE IN MARYLAND.—The *American Farmer*, of Baltimore, has recently given an excellent account of the progress of Horticulture in Maryland, from the pen of our esteemed correspondent Captain Snow. So much of what he refers to is of national as well as local fame, we have been permitted to transfer the paper to our magazine :

"That the popular taste and demand for flowers and flowering plants has kept pace with this progress, at least in and near Baltimore, seems demonstrated by the growth in numbers and extent of the commercial establishments, which supply our own people, as well as ship largely to distant points.

No less significant is the disposition, now so common among private citizens, not only to enlarge their plant-houses, but to give them features of architectural effect, for the better display of the rich treasures which they accumulate from the vegetable world. The erection of such imposing and costly structures as the conservatories recently built by Mr. W. W. Spence and Mr. W. H. Perot; the maintenance of extensive ranges like those at Clifton; the constant additions to the area of glass-houses of Messrs. Rasin and Shoemaker, and others, and the increasing number of less pretentious but no less interesting conservatories and green-houses, both in town and country, all testify that the love of plants and flowers, and of their culture, is extending on every hand.

Our purpose here is, however, to speak of the great and rapid extension in this community of the business of selling plants and flowers; and to illustrate it by some facts which we have gained from various sources.

After the war of 1812-15, the first person in the city of Baltimore to offer for sale flowers and garden plants, was a German, by name Heusler, who was located on the Philadelphia road, near the then city limits. Nearly contemporaneous with him was Mr. Booth, who possessed, probably, the first nursery, occupying the ground now bounded by Baltimore and Pratt streets, and facing on Schroeder, whence were sold trees, plants and flowers. Mr. Booth died in 1817. About this date, or shortly afterwards, James Wilkes, a Scotchman, and John Bastain, a Frenchman, had establishments on Lexington street, each selling from a general collection of plants.

In 1823, Samuel and John Feast, located on the Frederick road, cultivating trees, plants and

vegetables, and they were the first to offer plants for sale in the public markets of Baltimore. From this beginning the business has so grown that in every section of the city and on the roads leading into it from all directions there are commercial growers engaged in the production of plants and flowers. The number now in the trade, within the territory measured by a radius of seven miles from the City Hall, if we are correctly informed, reaches very nearly *one hundred and twenty* establishments. We have a partial list of the names of the parties now composing the trade, but from the difficulty of making it complete, we are unable to publish it, as we had in contemplation, though we may do so at some future time. It is not only in the number of florists that Baltimore has been conspicuous, but she has achieved distinction by the intelligence and zeal in the production of new and improved varieties of numerous flowers.

The well-known *Prairie Roses*,—Queen of the Prairies and Baltimore Belle,—were raised by Samuel and John Feast, and constituted, at that time an entirely new class, perfectly hardy and vigorous, of fine form and color, and though lacking in fragrance, long without a rival for pillars, &c. In 1846, the Massachusetts Horticultural Society awarded to Samuel Feast its gold medal for the production of these roses,—an honor rarely bestowed.

Edward Kurtz, an amateur florist who still lives, with his zest for horticultural pursuits unabated, exhibited in 1836 his seedling *Camellia Kurtzii*, which was followed by numerous others, some of them of excellent form and substance, equalling many imported varieties. He also originated a number of seedling *Azaleas*, which probably equal any in cultivation. Some plants of these varieties, in superb bloom were awarded at the last show of our Horticultural Society, one of its Certificates of Merit, only three of which have been issued.

Zebulon Waters, also an amateur, now no more, but whose love for and knowledge of plants is well remembered, produced many fine *Camellias*, some of the finest of which went out with numbers only attached. His *Globe Carnation* and *Double Scarlet Multiflora* are unique.

Samuel Feast also paid much attention to the *Camellia*, and his *Feastii*, *Fair Ellen*, *Jack Downing*, *Mary Edmundson*, *Eliza Schroeder* and others, are well worthy of cultivation.

Two other *Camellias* of conspicuous merit were produced in Baltimore—*Weaverii*, a splen-

did red, by Joseph Weaver, and Mrs. Hammer, a fine pink, by August Hammer, an amateur.

James Pentland has made most fortunate essays in the direction both of Roses and Camellias; his Bourbon Rose, George Peabody, is equal to any of the dark sorts, whilst his Beauty of Greenmount, Woodland Margaret and Dr. Kane take rank among the best of Noisettes; and his Camellias General Lee, Stonewall Jackson and Anna, rise high on the standard of merit. In both classes Mr. P. has under test other new productions now likely soon to see the light, one of his new Roses having been lately displayed at our shows.

The Tea Rose Cornelia Cook, so great a fashionable favorite at present in New York and Boston, originated many years ago with Anthony Cook, a well-known florist of this city, still active in his trade.

Wm. Fowler, gardener to the late Johns Hopkins, has produced some lovely Abutilons, which are finding their way into the hands of the trade.

John Feast has long been engaged in the origination of new plants. Among many others may be noted the Epiphyllum Feastii, a Cactus of surprising size and beauty; Aloe Feastii; Camellias Mrs. Lurman, a noble variety; Annie Feast, Mrs. Tabb, and many others; Carnation Mrs. Van Cott, &c.

Charles Campbell, formerly gardener to Dr. Thomas Edmundson and now to Mr. Winaus, has produced some Fuchsias and Azaleas of exquisite beauty, many of which have gone into general cultivation.

Agustus Hack, an amateur, now deceased, left behind him a collection of Camellias numbering 489 sorts, many of which he originated himself, some of them equal to any in cultivation, as May Flower, Pearl, Lizzie Jones, Eliza.

In the classes of plants more readily hybridized there have been of course many new sorts introduced from Baltimore, some of which have gone into the trade, others disappearing.

(To be continued.)

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

CENTENNIAL EXHIBITION OF 1876, (Concluded from page 256).—In small fruits our century of progress was not as well illustrated as it might have been if the plan of the Commission in relation to the system of judging, and of the awards, had been well understood. On the one hand there were many who supposed there would be competition as usual in country fairs, in which a few large growers crowd out the smaller ones; and, on the other hand were those who knew the old system would be abandoned, but had not come to understand that the new system did justice where the other did not, and that there was really more honor and profit—greater reward every way—than the old system was capable of. It was not until the good points of the new system were fully understood that fruits came in abundantly; and in the mean time the day of small fruits had passed away. Thanks, however, to the Fruit-Growers' Society of Ontario, this department was never wholly wanting in interest. In Gooseberries and Currants especially their exhibits excelled, and gave to the Centennial

visitors new ideas as to the possibilities of excellence in these fruits and their culture. Even granting much that might have been, had exhibitors from other sections acted with the same liberal spirit as was evinced by the Canadians, enough was seen at the Exhibition to prove that for the culture of these two fruits Canada has advantages superior to any other part of the American continent. The English varieties of Gooseberries, so difficult to raise in the United States through their susceptibility to mildew, were here in great perfection. The American Gooseberry has not advanced as much during the century as perhaps it might had systematic efforts been made in that direction. Still, there has been marked progress. At the beginning of our era we had no improvement in the native *Ribes rotundifolia*, or American Gooseberry. The first came from Massachusetts in the shape of Houghton's Seedling. Mr. Downing subsequently produced the variety bearing his name. Some half dozen in all have been introduced, of which a complete set was exhibited by Kuhn & Co., of Hoboken, New Jersey. The advance is meritorious, but none of the improved kinds approach in good flavor or size the average

English sorts. A marked feature of Gooseberry and Currant progress is the grafting of these fruits on the stronger varieties of American Currants (*Ribes palmatum*, *Ribes aureum*, etc.) by Charles Pohl, of Austria, with indications of its complete success. Much advantage is expected in the culture of these fruits by the introduction of this very original idea. That much more might be done in the way of the improvement of these fruits is evidenced by the exhibit of a hybrid of another American Gooseberry (*Ribes cynosbati*) with an English variety, by Mr. William Saunders, of London, Ontario.

Strawberries being among the first fruits of the season, were not, for the reason given, exhibited in great force. Two very large collections were made by two of the judges, but, in view of the delicate nature of their duties, no mention of them or their exhibitors is made in any way in our special reports or awards. But they served an admirable purpose, in the absence of other large collections, in showing the advance in Strawberry-culture during the past century. A large number of kinds came from Mr. John Saul, of the District of Columbia, and the remainder was made up of small lots, at different times, from various growers in the States of New York, New Jersey, Delaware, and Pennsylvania, particularly from the vicinity of Philadelphia. In fewer departments of pomology has there been greater progress. We commenced with some improved English seedlings of the horticulturist Thomas Andrew Knight, notably the Downton and Knight's Scarlet, with a little later, Keen's Seedling and Wilmot's Superb. The first American effort of consequence was perhaps that which resulted in the Hudson, a variety introduced about 1820. Massachusetts followed, about 1823, with Hovey's Seedling and Brighton Pine; and then Ohio, with Longworth and others leading in the van of progress. W. R. Prince, of Flushing, New York, also contributed largely to Strawberry-improvement. To Nicholas Longworth, of Cincinnati, much is due for the present popular status of Strawberry-culture.

The Strawberry in Europe has, mostly, hermaphrodite flowers. The American climate tends to divide the sexes, and it was especially the work of Mr. Longworth to make this fact known; and varieties comparatively unproductive before were made, by a more perfect system of fertilization, to yield profusely. The result was that the Strawberry became everybody's fruit. But the greatest advance in straw-

berry-culture came with the introduction of a hermaphrodite kind, equal in bearing qualities to the old unisexual varieties under the improved culture, and seemingly adapted to all climates and soils of the continent.—Wilson's Albany Seedling, from Albany, New York, about twenty years ago,—and from this, together with the excellent care in culture given by Jeremiah Knox, of Pittsburgh, Pennsylvania, modern American Strawberry culture may fairly date its birth. None of the kinds that were popular at the advent of the Albany made their appearance on our Exhibition tables; and the magnificent exhibit of them made by Mr. J. H. Withington, of South Amboy, N. J., shows how well it is holding its own. Boyden's No. 30, Charles Downing, Jucunda, and Triomphe de Gand, newer varieties, as exhibited before us, contest the ground hotly, and American improvers are diligently at work. Smith, of New York, Durand, of New Jersey, and Miller, of Carlisle, Pennsylvania, exhibited seedlings of much promise.

In the Blackberry we have gained immensely. Few who saw the magnificent berries of Mr. John S. Collins, of Moorestown, New Jersey, on our tables, and who read in every nurseryman's catalogue of Blackberry plants being sold by the thousands, know that thirty years ago the Blackberry was nowhere among the lists of cultivated fruits, and even to-day the Blackberry of Europe is in use only by the poorest classes. The first great advance was made by nature, and found in a wild place by Mr. Secor, of New Rochelle, New York. Its popularity is, however, due to the gentleman whose name it bears,—Mr. Lawton, of New York. Subsequently Massachusetts gave us the Dorchester, and New Jersey the Kittatinny and Wilson's Early, which still continue our standard kinds. No successful effort at artificial improvement appears. All kinds in cultivation are simply the result of discovery by sharp eyes among fields or fence-corners.

The Raspberry has made great progress. We began with the European Red and Yellow Antwerps, and an American variety, the Purple Cane. Up to thirty years ago we had nothing worth speaking of except these kinds. Dr. Brinklé, of Philadelphia, commenced the improvement of the Antwerp class, raising numerous admirable varieties, and these were fortified by introductions from Europe; but, with the exception of the Hornet, and Mervaille des Quatre

Saisons, and a recent American variety of the same class, the Herstine, none of these made their appearance among our exhibits, and have mostly disappeared from cultivation. The present popularity of the Raspberry dates from 1863, when the Philadelphia was brought prominently to notice by Parry, of New Jersey; and whatever kinds have become popular since then have been chiefly of the same race from which the Philadelphia sprung. Many seedlings came before us during our examinations on the tables of the Exhibition, some of which may in some respects excel this; but all are of this native class. The *Rubus occidentalis*, or "Thimbleberry," a native Raspberry, has been improved during this era by selections from wild places. One before us, the Gregg, from Indiana, was far superior to the ordinary wild forms. Neither of these two classes of native Raspberries, even in their best improvements, equal in size or flavor the best varieties of the European race.

In Cranberries there has been a marked improvement in size, solidity, and flavor, and chiefly by the efforts of Connecticut growers, they have been made profitable crops in comparatively dry land. Upland Cranberries, of a quality superior to many grown in swamps, were exhibited by Mr. Trowbridge of Milford, Connecticut. The Cranberry has become a crop of immense importance, and the exhibitors, chiefly from New Jersey, represented many thousands of acres.

Of Cherries, a large number of the kinds popular at the Revolution have disappeared. The Carnation, Late Duke, Oxheart, Yellow Spanish, and May Duke are still planted; but, in the main, other and better kinds have taken their place. The Black Tartarian, a European variety, came in soon after the beginning of our era, and the Early Richmond an American variety, found in Virginia has been in general culture about three-quarters of a century, and these two are about the only ones of the older sorts that are now grown. Many of the improved varieties have been imported from Europe, but much of what we have gained is due to Professor J. P. Kirtland, of Cleveland, Ohio, who made their improvement a matter of special attention. With the exception of magnificent fruit from Oregon, and a few kinds from the vicinity of Philadelphia, there was little in Cherry-culture developed by the Exhibition. In the Plum, however, the Exhibition was a great surprise. No such fine collections as were made

here were probably ever exhibited before in the world, and this too, in the face of a generally prevailing impression that Plum-culture on the American continent had nearly died out. The enemies of this fruit are numerous now. The borer weakens the trunk; the black knot destroys the branches; and when these foes to the Plum-culturist are absent, the curculio deposits its eggs in the fruit, which then generally rots before maturity. It does not seem clear that any of these troubles existed at the commencement of our era; but we may believe that they were not serious impediments to general success. They at length became so powerful that Plum-culture was generally abandoned. A few persevered, of whom notably were Dr. Hull, in Southern Illinois, and Ellwanger & Barry, of Rochester, New York. A knowledge of the insects and of the disease has been obtained by gardeners sufficient in a measure to control these evils, and now Plum-culture is meeting with considerable success. The displays of Messrs. Ellwanger & Barry on several occasions during August and September afforded great pleasure to visitors. To these succeeded exhibits from various parts of the Dominion of Canada. These were continuous through the whole season. Numerous fine samples were received from Oregon, chiefly of the varieties of prune, foreshadowing a useful and extensive industry in that far-off region. It is chiefly in successful culture that progress has been made. Many valuable varieties have, however, been added to the list of good Plums during the century.

In Peaches our progress has been wonderful. The list of those in cultivation at the time of the Revolution was very small. A few of these may be found in an orchard occasionally, but the Old Mixon is perhaps the only one that may be considered popular to this time. So many good ones abound that it is often difficult to get good growers to agree on a selection. Progress has been especially marked in the production of superior early varieties, and we find our markets supplied with them from June till October, and even earlier in the South. Some fine Early Beatrice were exhibited from Alabama together with early Strawberries grown in the vicinity of Philadelphia.

In regard to vegetables, the most noteworthy advance has been in their extension to field-culture. In the olden time vegetable-raising was more especially the gardener's work, and the spade the great implement in the work. Now

the plow is brought to rule over the market-garden, until agriculture almost considers the art her own. The potato—the great potentate of the vegetable world—has been seriously attacked by insects and diseases, both of which threatened almost annihilation. But the art of the gardener has been equal to the contest, and to-day the potato is as cheap and as abundant in our markets as it was at the beginning of our Centennial era. The varieties, however, seem soon to give way to others. Of the many hundreds of varieties seen on the Exhibition tables not one was over ten years old. This fact seems to keep improvers on the alert. Bliss, Hexamer, and others exhibited seedlings in almost endless varieties, so as to be able to select fully-proved kinds as the older and more popular ones degenerate. From Bermuda, however, were exhibited remarkably fine potatoes, of the same character as have appeared in our markets from there for many years past, showing how favorable is that part of the world to steady potato-culture.

The collections of vegetables were not diversified locally to a sufficient extent to draw many inferences suitable to a general report. From Manitoba, Canada, there was a display of all the common Autumn vegetables that surprised everybody by their size and tenderness; the States of Iowa and Connecticut made good displays; a small collection came from Ohio; and the balance was made up by A. L. Felton, of Philadelphia, Pennsylvania, Landreth & Sons, of Bloomsdale, Pennsylvania, and B. K. Bliss & Son, of New York. On account of their perishable character, it was hardly to be expected that the articles exhibited in this department should partake of a very extended international character; but on several occasions the British Commission exhibited the peculiar fruits of Jamaica as they came in at their respective seasons. The fruits of other distant countries were exhibited in spirits, instructive as making the world acquainted with the indigenous products of these distant regions, but indicating no likelihood of becoming known as fresh fruits in the great markets of the world.

TRANSACTIONS OF THE MASS. HORTICULTURAL SOCIETY, for 1878, Part I., from R. Manning, Secretary. This old Society shows increasing activity and usefulness with age. The transactions alone are worth the price of membership, to say nothing of the social attractions and the interest of its continuous exhibitions throughout

the year. The present has the valedictory of President Parkman, on the introduction of the newly selected President William Gray, Junior. Mr. Parkman gave some excellent suggestions on "running in ruts," and especially on the source of absurdities of the "premium" system.

MASSACHUSETTS HORTICULTURAL SOCIETY. —*Orchid Culture*. At a meeting of this society, held July 20th, numerous specimens of Orchids exhibited showed that these pretty flowers are popular. Spikes of *Dendrobium filiforme* and *Cattleya Dowiana*, exhibited by F. L. Ames, received the first premium. A gratuity was awarded to James Cartwright for spikes of *Cattleya Loddigesii*, and to James Comly for *Cymbidium aloefolium*. For his *Cattleya Dowiana*, F. L. Ames was awarded a silver medal.

Yucca filamentosa.—It is strange that such a beautiful plant is not used more extensively; it flowers abundantly in hot weather, and its dark-green leaves and tropical appearance always render it attractive; its being an evergreen adds greatly to its value as an ornamental plant. For a display of this plant, J. W. Manning received a gratuity.

Window Gardening.—An interesting feature in the report of this meeting was the prizes offered for flowers grown in window gardens; a collection comprising *Petunias*, *Lobelias* and scarlet *Pelargoniums*, grown in this manner, was exhibited by Sophia Rouse and Edward Revalon, for which they were awarded a gratuity.

Acer colchicum rubrum.—John R. Brewer exhibited some specimens of this handsome tree. As this Maple's principle attraction is in the scarlet leaves produced by the young Summer growth, to have it looking its best it should be kept cut as a shrub, for the more Summer wood produced the more brilliant the appearance. The correct name of this Maple is *Acer letum*, and not *Acer colchicum*.

Stokesia cyana.—Among the herbaceous plants exhibited was *Stokesia cyana*. This is one of the most striking flowers among the composite, it has large blue flowers, is a free bloomer and comes in flower early in the Autumn, indeed early in July, and remains flowering a long time. This plant should be in all herbaceous collections.

Raspberry, Pride of the Hudson.—E. P. Roe exhibited two quarts of this variety, and secured the first premium; Warren Fenno, for Hertsine, second; and third premium to W. K. Wood for Clarks.

Currants.—The Versailles carried off all the prizes offered for exhibits of that fruit.

Gooseberries.—The Downing took first and second premiums, the Royal George the third.

Sweet Corn.—By exhibiting the Minnesota variety, S. G. Stone received first premium; S. Hartwell, for Narragansett, the second, and the third was awarded to S. G. Stone for Crosby.

THE MARKETING OF PEARS, BOTTOM HEAT, GARDEN IRRIGATION, CULTURE OF ROSES, FERTILIZERS, SMALL FRUITS—among others, show how varied are the subjects of the discussions reported in full in these pages.

THE
GARDENER'S MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

Vol. XX.

OCTOBER, 1878.

Number 238.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

It is a matter of surprise that the Lily is not more appreciated by our flower gardeners. By a judicious selection they may be had in bloom all the summer season. Last year we saw a selection of this sort. The first to flower was *Lilium Canadense*, one of our native kinds. This was open and made a grand display by the end of June. After a couple of weeks they were on the decline, and the white *L. candidum* followed, then followed *L. bulbiferum*, next *L. superbum*, next *L. auratum*, bringing up with *L. lancifolium* about the middle of August. By this simple list the beautiful Lily was continuously in bloom for three months. It is proper to note this now, because the fall is the proper time to plant Lily bulbs.

Hyacinths, Tulips, Crocuses, and hardy Dutch Bulbs generally, must have immediate attention. Crocuses and Snowdrops are often planted out in the grass on the lawn; the former is not very objectionable as the leaves have so close a grass-like appearance; but the last should never be so employed, the foliage giving, the whole summer afterwards, a very coarse and weedy appearance to the lawn.

Hyacinths and Tulips may be set out in the beds devoted to summer-flowering bedding-plants, as they will, in a great measure, be out

of flower before the bedding-time comes around, when they can be either taken up and transplanted to an out-of-the-way-place to ripen, or the bedding-plants can be set in between where the bulbs grow, without either much interfering with the success of the other.

As a manure for these bulbs, nothing has yet been found superior to well-decayed, sandy cow-manure; but where this is not conveniently at hand, well decomposed surface-soil from a wood will do as well.

Herbaceous hardy border flowers are often propagated in the Fall by dividing the roots; but, unless it is convenient to protect the newly-made plants through the winter, it is better to defer this till Spring, as the frost draws out of the ground and destroys many. Where it is now resorted to, a thick mulching of leaves or litter should be placed over the young stock when transplanted.

Few things are more valued in winter than a bunch of Sweet Violets. A few may now be potted, and they will flower in the window towards Spring; or a small bed of them may be in a frame, which should be protected by a mat from severe frost. To have Pansies flower early and profusely in Spring, they may be planted out in a frame, as recommended for the Violet.

Many kinds of hardy annuals, flower much better next Spring, when sown at this season of

the year. A warm, rich border should be chosen, and the seed put in at once. Early in Spring they must be transplanted to the desired position in the flower border.

Dahlias, Gladiolus, Tuberose and other plants that require winter protection for their roots in cellars, should be taken up at once on their leaves getting injured by the first white frosts. The two latter should be pretty well dried before storing away, or they may rot. Dahlias may be put away at once.

We like planting trees early. There is no occasion to wait for the fall of the leaf; as soon as the leaves are yellow go to work. It is often a question whether best to plant in Fall or Spring. If a very hot, dry Summer, set in after Spring planting; there may be losses, and so if there is an early and severe Winter after Fall planting. Last Winter around Philadelphia was rather open, and planting was very brisk up to Christmas. There never was such success. We doubt whether five per cent. of the enormous number set out failed.

COMMUNICATIONS.

SEEDS AND SEED PLANTING.

BY CHAS. H. SHINN, NILES, CAL.

(Concluded from page 261.)

Tree and shrub seed are most conveniently sown in boxes two or three feet square and four inches deep. The soil needs only to be rapidly mixed and pulverized with a shovel, thrown into the boxes, pressed, so that no settling will occur, and sown broadcast, the seed being covered with finer soil. The seeds of all conifers, such as Juniper, Cypress, and Fir, sprout slowly, and require moisture, light covering, and a cool atmosphere to make them grow. Our best plan is to use a covering of laths, and sow the seed early, about the first of December, covering them with fine sand. When the young plants are just coming through the ground, affairs begin to approach a critical and troublesome period. Many people manage to learn the secret of sowing seed, but comparatively few understand the care of young seedlings during the dangerous portion of their existence, from the time they sprout to the appearance of the second leaves. If you sowed too thick they come up in bunches, and lift the soil, thus exposing the roots. Hardy plants survive this evil, with a little thinning out, but tender plants require a little sprinkling of

sand to fill the crevices. Sand is also good, if the soil gets too wet and covered with green moss, to dry the surface. If the plants get too much heat they wither; if too much damp they decay, and suddenly perish; if too much shaded or crowded they spindle, or become, as gardeners express it, "drawn," that is, they increase in height without a corresponding strength, the cellular tissue being merely lengthened, without additional width. Light, warmth, and moisture are the watch-words for most plants at this period. Avoid all extremes; do not let the surface get so dry that it crumbles to dust, or so wet that green scum forms on the top. Conifers need shelter from the direct sun, but tropical seedlings may be placed in the warmest place obtainable.

Seedlings of all kinds ought to stay in the seed boxes until the second leaves appear, and it is usually best to leave them until the third or fourth pair of leaves are seen, and the stem has become somewhat hard. Plants that flower the first season ought then to be spaced in other boxes, giving them rather more room than they had before. Tree and shrub seedlings may with safety be left in the seed boxes for the first year, and then planted in rows in the open ground. The various Palms and Drecenas must be potted off early, or the roots grow so that they cannot be handled. Blue Gums, Eucalyptus globulus, sown in August, and spaced once, are fit for planting in Spring. The garden flowers, such as Carnations, Asters, Balsam, Petunias, &c., will become stocky, and gifted with fibrous roots, after one or two transplantings. They can then be put in the garden, in masses, little groups, or as single specimens, as preferred. For handling small plants, use a knife blade, or a trowel not larger than a teaspoon; for moving larger plants, and for garden work generally, a seven-inch, steel blade garden trowel will be needed.

Seeds, although carefully planted and watched, are subject to various living enemies, first among which may be mentioned mice, they are excessively fond of some kinds of seed, notably the Blue Gum, and will find exposed boxes, scratch up the surface, and take out every seed, leaving little hulls, in bitter mockery. Pine seed is another mouse delicacy. A greenhouse should be made safe against mice, and if one sneaks in occasionally, he can be circumvented. Where seed boxes, are however set on a porch, or in a shady place out-doors, the mice often commit depredations. The boxes can be covered with glass, or

surrounded by strips of tin, and poison can be used with good effect.

The small red and black ants are also among the enemies of horticulture in general, and of seed sprouting in particular. We fervently advise every novice in the ancient art of gardening to study the ways of these restless and impudent rascals. If the flavor of any kind of seed suits their fastidious palates, they will form in sedate military lines, and carry off every seed in the box before you really discover the trick. I believe that ants are responsible for at least a few of the failures usually attributed to poor seed. If the seed they fancy are too large for one to shoulder, a number will unite, or else they will dig into it, and carry off the kernel piece-meal. I have watched several minute red ants thus dissecting a *Canna* seed and displaying as much zeal as if they were scientific men trying to discover the secret of life. Now and then they stop to consult, or to announce progress, thrusting their antennæ close together, then, with renewed energy pushing the work of excavation, till all the kernel was removed. Against ants, therefore, we must declare war of the relentless order. To save the boxes attacked make a heavy mark with chalk or tar on the edge of the box, trace the marauders to their nests, and drown them out with boiling water. Move your boxes and pots occasionally, and if they have started fresh colonies make matters unpleasant for them. It is not cruel, because it is better for them to move out-doors, and study nature. Besides—and here is the gist of the matter—we want the flowers.

The greatest danger which threatens seeds planted out-doors, and also small plants, especially conifers, arises from the presence of so many small birds through the winter in our mild climate. *Salpiglossis*, *Nemophila*, Ten-week Stock, *Lobelia*, and many other flowers, will be eaten off as soon as they appear. Vegetables often suffer. Pines and Cypress, whilst small and tender will be completely destroyed. If it were otherwise, field culture would be the cheapest way of growing our hardy evergreens, but the little birds snap them off as soon as they appear, and skip on the bushes saucily when the excited owner comes along, to astonish him with a flood of twitters, and a multitude of vibrant, melodious calls that half atone for the injury. The only effectual method of saving the plants is to cover them with lath frames until they are a couple of inches in height.

The growth of plants from seed, to sum up all in a sentence, requires the most patient, endless vigilance. It is the straight forward, natural way of propagation, but it is beset with minor difficulties. No one can start seed, except by accident, who does not think of their welfare, and examine them several times a day, until they are up, and large enough to transplant. Bye-and-bye you will learn how long it takes this and that kind of seed to germinate, you will know just how they look as they shake the soil from their brown garments, and unfold their new apparel of green; you will discover that from their very first appearance no two plants are precisely alike, and you will study their habits and progress. So seed planting will become the delight of delights, and seed-growth the mystery of mysteries.

CEANOTHUS.

BY W. C. L. DREW, EL DORADO, CAL.

Of the many species of flowering shrubs which decorate the hills and valleys of California, few, if any, strike the beholder as more worthy of cultivation than the several *Ceanothus*. Of this species of shrub, belonging to the natural order *Rhamnaceæ*, we have some nineteen varieties in California. By far the handsomest variety is *C. thyrsiflorus*, or the California Lilac, discovered and named by the Russian botanist Eschscholtz. This is a strong grower, forming handsome, well-branched plants, five to eight feet high. The flowers are produced in dense compound racemes about five inches long. The flowers are of a bright ultramarine blue and have a pleasant odor, they are produced in abundance in May and June. *C. cordulatus*, well known in California as Snow-bush, is a beautiful companion for the first named variety; the flowers are produced in dense panicles of a pure snow white color. In habit and growth it resembles *C. thyrsiflorus*. *C. integerrimus*, is a fine variety with racemes of pure white flowers. It grows from three to five feet high, forming strong well-branched plants; this variety, while not as handsome as the other two, is well worthy of a place in any collection.

C. dentatus is a fine variety of a lower growth than the former; the flowers are produced in racemes of a dark blue color, and in such abundance that the plant is literally covered with blossoms, and forms an object when in bloom that the beholder will long remember. *C. divaricatus* is known as the white flowering California Lilac; the flowers are produced in long racemes, often six inches long, of a pure white

color. It grows from five to eight feet high, and forms dense well-branched plants.

C. oliganthus is a fine variety, which is unknown except around Santa Barbara. The flowers are produced in racemes about three inches long, in color they are bright blue. Not as free flowering as the other varieties.

C. velutinus or Douglass *Ceanothus* grows about three feet high; it produces pure white flowers in loose racemes, a very free flowering variety. I am of the opinion that this variety will be harder than the others in the Eastern States. *C. azureus* is a very pretty variety, the flowers produced in racemes two inches long, of a rich blue color.

C. spinosus is the highest grower of all the varieties, often twenty feet high. The flowers are very fragrant, of a dense deep blue, produced in numerous racemes. Wherever a tall shrub can be used, none will give more satisfaction than this variety of *Ceanothus*.

The other varieties are equally desirable.

HYDRANGEAS.

BY J. J. S.

Hydrangea paniculata. Very few, if any late introductions for the garden and shrubbery please me so much as this *Hydrangea*. Hardy, easily, very easily propagated, very showy, lasting a long time too, it has few rivals; profuse of bloom, and that bloom changing from white to purple or red, it is continuously elegant; after two or more years growth it is little less than superb. Coming, too, about the 1st of August, when blooming shrubbery is mostly over, I constantly wonder why it is not more abundant in pleasure grounds.

The *Hydrangea*, Thomas Hogg, is newer, has not yet developed into much size, and is not, to my eye, so pleasing; it is not hardy, and will not take the place of *paniculata*. We are neglecting too much the old *Hortensis*, which we do not now often see in its old glory.

In this connection, I would remark that there has been a story, verbally circulated, that somebody was about to bring out a real novelty—a *Hydrangea* that clings to a wall, and has grand panicles. Can Mr. Meehan tell us about this, or shall we have to go to the Messrs. Parsons? I am all anxiety. At any rate, *H. paniculata* would be a choice acquisition to all country gardens, front lawns, &c.

[We understand Messrs. Parsons have not yet

a stock sufficient to warrant them in offering it for sale. Everyone who has seen the *H. paniculata* will appreciate the good words our correspondent has for it.—Ed. G. M.]

COUNTRY HOMES.

BY THOMAS MEEHAN.

At a meeting of nurserymen from all parts of the Union, held in the city of Rochester, recently, to consider the present condition and future prospects of the business, Mr. Thomas Meehan, being present, was called on for a few remarks, which are thus reported in a Rochester paper. He alluded to the great improvements made before the war in the planting, and in the embellishment of country residences, and which were largely promoted by the horticultural societies of that day. More recently, less attention has been given to these improvements by persons of wealth, who now devote a large portion of their time to Summer travel, and to visiting places of Summer resort. This prevailing practice has left but little time and means for horticultural improvement, and has resulted in a diminished call for nursery products. He alluded to the great benefits which nurserymen had conferred on the country, and to the means employed by them for disposing of their trees. In this State, agents are mostly employed, and have introduced tree planting in many places where land owners would not take the trouble to send to nurseries. A prominent cause of the present depression in the nursery business was the fact that many had undertaken it with but little knowledge, who had raised trees largely, had overstocked the market, disseminated poor sorts, and sold trees under wrong names. This course had greatly injured the legitimate business, and given a bad name to reliable and accurate dealers. He recommended nurserymen to take more interest in planting in their respective neighborhoods; they should take an active part in horticultural societies, promote public exhibitions, assist in sustaining financially such organizations as were deficient in means, and in this way a taste and demand would be gradually promoted. This result would also be advanced by the wider circulation of periodicals devoted to the subject. So far as horticultural and agricultural societies were concerned, he thought premiums should not be awarded because one exhibitor's articles were better than another's; but because they favorably compared

with the best specimens known in their own classes. This would require a higher order of judges than had generally prevailed; but more care and intelligence on the part of judges in awarding prizes at shows, would encourage a larger number of exhibitors, and real merit would be better understood than mere quantity and show. Mr. M. also remarked that nurserymen had suffered great losses by giving long credit, to effect sales; when they became overstocked with trees, they were tempted to sell at any rate, and on any terms. Large numbers of weak, and in the main, dishonorable firms, were sustained in existence by this plan, who in turn competed injuriously with the firms that had sustained them. He said it was better to destroy the trees than to overburden the market. The practice of selling trees at prices so low as hardly to pay for digging and packing had largely contributed to depress the trade. It was an injury to the public as well as to the other members of the trade, as, feeling that they had suffered enough loss already, the temptation to haste in digging and careless packing was great, and large numbers of such trees died on the purchaser's hands.

EDITORIAL NOTES.

THE LEMON VERBENA.—It is said that a few of the dried leaves of this plant mixed with Chinese tea adds to its tastefulness to the palates of many people.

THE PERSIAN LILAC.—It is now attributed to Decaisne, that what is known in gardens as the Persian Lilac is not a Persian but a Chinese plant.

THE PURPLE BEECH AS A HEDGE PLANT.—What is the reason that Purple Beech is not more used for ornamental hedges than it appears to be at present. I should say there is no plant that forms a more beautiful hedge for bounding or dividing a pleasure ground, contrasting as it does so charmingly with the green sward. It may be said to plant a hedge of this description would be too expensive, as in nurseries they are mostly, if not all, grafted, and consequently, are expensive. There are very few places but one or two large trees are to be found, and I venture to say that under such trees there are plenty of young seedlings springing up just now; and if they are taken up and planted in some convenient place, in lines, and let grow on for a couple

of years, they will make nice plants for forming a hedge, and they will invariably keep the same color as the old tree. There is a large tree of Purple Beech here, and there are hundreds of young plants now growing under it. It was this suggested to me that the present must be a good season elsewhere for them. I had a quantity of seedlings taken up as above ten years ago, and they now form a splendid hedge, about five feet in height, which is much admired by all who happen to see it. The growth and foliage hang down very gracefully. I would prefer it, in fact, to any other tree usually planted for forming hedges in gardens and pleasure grounds.—*B. B., in Garden.*

THE GREY PINE.—Prof. Beal has the following good word for the *Pinus Banksiana*. We have often wondered why this beautiful small growing Pine was so scarce:

"This small tree goes by a great variety of other names among the people of Michigan, such as scrub, clark, crocodile, Jack, buckwheat, etc. It is a scrubby bush or small tree, though it often becomes fifty or even eighty feet high and fifteen inches in diameter. It grows in poor sandy soil. It is rather more slender and graceful than the Austrian pine, which it somewhat resembles. The leaves are short and of a dark color. The grey Pine is not often planted, but I see no reason why it should not find a place on every well kept lawn. Small trees can be seen in the Aboretum."

CANNAS.—It is singular that more attention is not given to Tropical plants for borders. They like hot weather, in fact the hotter it is the better they grow. Among them none will do so well as the Cannas. Judging by the way they grew during our late hot spell, the temperature seems to suit them exactly. A fine display can now be made by Cannas alone, so many varieties of color having been produced of late years. A watering now and then, is all the attention they require. We have seen lately (August 5th) many varieties in flower, and with their beautiful colors they make a pretty show. In addition to their fine flowers, the tropical appearance of the leaves adds greatly to their interest.

PROTECTING PARK TREES FROM CATTLE.—Writing to *Land and Water*, Mr. Higford Burr, Aldermaston Court, Reading, says:

"I dare say that most of your readers who take any interest in planting have often remarked how an Oak or other tree of fortuitous planting has attained a fair growth, owing to the protec-

tion of a Thorn bush, which has saved it from cattle. Taking a hint from Nature, I desired my woodman last autumn to plant in my park, by way of experiment, a dozen trees, about six feet high, in such a manner that they would be protected each by a Thorn. He performed his task with great judgment, and I am happy to say that hitherto the experiment appears to be so successful that I shall repeat it on a larger scale this next November. Planters, of course, will see that my object is to plant single or grouped trees, without having to incur the expense and trouble of fencing them; and having been thus far successful, I am desirous of imparting this 'dodge' to others, who, having rough grounds, may thus make use of their Thorns as nurses for more valuable trees."

In America we cannot wait for the Thorn trees to grow, but cut the Thorn's branches and work them round the trunks to be protected. Around Philadelphia it is not uncommon to see Honey Locust, Yellow Locust, Osage Orange and even Blackberry branches used as protectors in this way.

ASPHALTING WALKS.—The value of asphalt ought to be more thoroughly understood, considering the benefit it is to amateur and gardener alike, but a great many object to it on account of the color and unpleasant odor in hot weather; but whoever will follow my instructions will have a walk like an ordinary gravel walk with the durability of the asphalt. In the first place, it is indispensable to edge the walk with edging stones, as the wear and tear generally begins from the sides of the walk, from the soil parting from the asphalt in dry weather, causing the latter to crack; hence the necessity for edging stones. Then fill up the walk as recommended by James Firth, with the addition of a little pitch boiled with the tar, and when well rolled, leave it within an inch of the top of the edge-stones; then with the mixture of pitch and tar, while hot, "paint" the walk a few yards at a time with an old sweeping brush, some one to follow with some fine sifted Buxton limestone (not spar), and scatter it over the "paint," so that there is not a particle of the "paint" to be seen; then roll well before it sets, after which sweep off all the limestone you possibly can, and it will leave the walk, as I have said, a dry and solid gravel walk without the objectionable tar being visible, the pitch preventing its working through. The cost will be 1s 4d. or 1s 6d. per yard, depending in a great measure upon the locality for getting the edging

stones. I omitted to say the edging stones will be covered by the grass-turf, so that they will not be objectionable on the grass lawn, but will give a very neat appearance, besides being better to edge and keep clean. I need hardly say, fine dry weather is indispensable during the operation.—*The Gardens, Horncliffe House, Rawten-stall. John Fletcher.*

APONOGETON DISTACHYON NOT NECESSARILY AN AQUATIC.—It may be good news for many of your readers who are not possessed of ponds or tanks suitable for growing this deliciously sweet-scented plant, recently described and figured in *The Garden*, that water is by no means necessary in which to grow and flower it successfully. When visiting the experimental department of the Jardin des Plantes at Paris recently, I was shown, in one of the greenhouses, by M. Carriere, a pot containing a plant of the Aponogeton covered with its curious pure white distichous flowers, but destitute of foliage, and showing a large number of flower buds protruding from the crown of the plant, which promised a long succession of bloom. The house was quite filled with the delicate perfume exhaled from the numerous blooms—a perfume which much resembles that of the Winter Heliotrope (*Tussilago fragrans*). M. Carriere informed me that he grew the plant in rough lumps of peat mould mingled with potsherds, which were also scattered thickly on the surface of the pot. I may add that I have never seen half so many blooms open at one and the same time on any plant growing in the water as were in full perfection on this potted plant. A more charming or sweet-scented plant for window or room culture could not well be discovered than the Aponogeton distachyon thus grown in a pot.—*W. E. G., in Garden.*

ASTILBE BARBATA.—Generally, but erroneously, known as *Hoteia Japonica*, and *Spiraea barbata*, cannot be too highly appreciated as a decorative plant for early forcing; its pretty, erect, shining green foliage, surmounted by numerous beautiful and graceful panicles of white inflorescence, giving the whole plant an elegant appearance, and rendering it at once most pleasing and useful for decorative purposes.—*W. Bull.*

WHAT AILS THE TREES.—A couple of years ago the city of Philadelphia concluded that the dirtily disgraceful Independence Square should be made decent. Among other things it was re-sodded. Those who do such work are sel-

dom the intelligent gardeners; in fact those who know are seldom employed where knowledge is required. So to sod the ground, the ground was all dug over, and an immense number of surface roots were destroyed. Of course as every intelligent man would know, many of the trees died, others were badly injured, and "What is the matter with our trees?" was the wonder of many a correspondent in the city papers.

But what we want to say here is that we can get no comfort from those, who, when they see mere pick-axe and spademen employed to do intelligent gardeners' work, tell us "they do things differently in England." For the writer of this saw just the same ignorance displayed in some of the London Parks as we find here, and just the same wonder "What is the matter with the trees?" in their newspapers.

There is no surer way to injure a tree than to cut off half its roots. Usually the long woody forks are thought to be the "roots" by those who do not know anything of gardening. Those who know better think more of the small ones, and very little of the old woody forks.

NEW OR RARE PLANTS.

A BLUE PRIMROSE.—The *Gardener's Magazine* says: "A blue Primrose was exhibited by Mr. G. F. Wilson at South Kensington, on Tuesday last, under the designation of *Scott Wilson*. The flowers are large, stout, of good form, and of a rich deep blue color. It is so remarkably distinct in color that it must be regarded as a most valuable addition to the list of hardy Primroses now in cultivation under distinctive names."

CAMPANULA ALLIONI.—A dwarf-habited species found on the north of Italian and French Alps, is now flowering finely in the nurseries of

Messrs. T. Backhouse and Son, York. The flowers of this plant are remarkably showy, owing to their bold bell form, distinct marginal tooth-ing, and fine deep purplish-blue color.—*Gardener's Magazine*.

THE ROSY SNOWFLAKE (*Leucojum roseum*).—The prettiest hardy bulb in flower in the Kew collection at the present time is this rare little gem. Its blossoms, which are about the size of Snowdrops, are unaccompanied by leaves, and are borne on slender stalks about four inches high, in the same nodding away as in the case of Snowdrops. The name *roseum* is probably taken from the flower-stalk and the membranous leaf on it, which are of a red color, but it does not affect the snowy whiteness of the flower, except at the point of attachment to the stalk. Like most of its congeners, this Snowflake is a native of South Europe, and delights in a sunny border in a light soil.—*Garden*.

SCRAPS AND QUERIES.

BEAUTIFUL HYDRANGEAS.—A Newport correspondent speaks of a bed of Hydrangeas in the grounds about the cottage of Harry Ingersoll, Esq., of Philadelphia, which is one of the floral gems of the place. The bed is about twenty-five feet by five or six wide, and comprises many varieties of color. It does not seem to mind the breeze sweeping over some 3000 miles of sea.

DEEP PLANTING OF BULBS.—A California correspondent suggests that the reason the bulbs of that State do so poorly East, is that they are not set deep enough. He says that wild, they are generally found six inches below. This applies more or less to all bulbs.

GREEN HOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

Room gardening has progressed probably faster than many other branches of gardening. It is not necessary to have the tender things that require skillful greenhouse treatment. There are numberless green things which require little heat

and are not afraid of shade, that will grow well in windows, and in their rugged health, are far preferable to elegant invalids so often petted to so little purpose.

Many kinds of annuals also come well into play; amongst other things, *Phlox Drummondii*, *Sweet Alyssum*, *Collinsia bicolor*, *Schizanthuses*, *Mignonette*, and *Nemophila* are essential.

Where many flowers are desired for bouquets in winter, a good stock of such as flower easily should be provided, especially of white-flowering kinds, without a good sprinkling of which a bouquet has but a very common-place look. *Deutzia gracilis* and *D. scabra*, *Philadelphuses*, and *Tamarix* are very good hardy plants to pot for Winter flowering. The *Iberis sempervirens* is also a splendid white to force for its white flowers. *Lopezia rosea* is nearly indispensable for giving a light, airy gracefulness to a bouquet; *Camellias* and *Azaleas* cannot possibly be done without.

Bulbs for flowering in pots should be planted at once. Four or five-inch pots are suitable. One Hyacinth and about three Tulips are sufficient for each. After potting, plunge the pots over their rims in sand under the greenhouse stage, letting them remain there until the pots have become well filled with roots, before bringing them on to the shelves to force.

There are but few things in the greenhouse that will require special treatment at this time. *Camellias* and *Azaleas*, as they cease to grow, will require less water; but it is now so well known that moisture is favorable to growth, and comparative dryness favorable to flowering, that we need do no more than refer to the fact.

COMMUNICATIONS.

ORCHID CULTURE IN THE UNITED STATES

BY C. H. S., BALTIMORE, MD.

It is evident that there is an increasing interest in Orchid culture in this country, and I find that any reliable information on their habits is eagerly sought after. Their wonderful manner of growth, added to their beauty, and the delightful odor of many species, have made them subjects of interest from their first discovery, but it is only within the last twenty years that their culture has been successfully carried out in Europe. Some few persons in this country have also fine collections, but their popular culture is only a thing of a very few years. Want of information, the high price of the microscopic plants usually sent from Europe, and want of patience in the growers, have tended to make them, if not unpopular, at least not much sought after. The opinion that a damp, hot and shady place was essential to their cultivation, has been found to be erroneous. In fact no Orchid would present a healthy appearance if subjected to such treatment for a long time. Orchids, as far as my personal experience goes, and I have spent a considerable part of my early

life in South America and the West Indies, do not grow in dense forests, but on trees on the edge of forests, or overhanging streams, or swamps, where they have plenty of air and light; and whilst they are subjected to much heat and moisture in their growing season, at times they are subjected to great droughts, and the shriveled appearance of newly imported bulbs is not caused so much by the length of time they have been gathered as to the prolonged drought in their own habitats. If any one wishes to prove the correctness of this, let them cut off a sound, plump pseudo-bulb from any *Cattleya*, *Oncid*, or other bulbous Orchid, weigh it carefully and then put it away in a close, dry box, but away from the greenhouse. I have seen them after three months as plump as when cut, and they will be found to have diminished but little in weight. And if Orchids are gathered when they are dormant, and not packed too close, there is no telling how long they will retain their vitality. I have some *Dendrobies* now starting into growth, that I have had nearly a year without showing any sign of vegetation. In purchasing newly imported Orchids, it is of paramount importance to see that the eyes at the base of the bulbs have not been rotted out, either by being packed too moist, or at an improper season. *Ærides* and such Orchids as have no pseudo-bulbs, having no great supply of elaborate sap, of course cannot be kept so long without moisture.

The increased taste for Orchids in this country, will no doubt induce collectors to send plants here for sale, and our nearness to many of the Orchid producing countries, and increasing steam navigation, should soon make us independent of Europe, for our supply of South American and Mexican and Central American varieties, and East India kinds could be brought here via San Francisco, in less time than to Europe. Quite a number of importations of Orchids have been sold by Young & Elliott, New York, and good plants, reliably named, seem to have brought good prices. In the main they have been in good condition, and I do not think that I have lost five per cent., and these may have been lost by my ignorance in handling them. As no doubt more will be imported, it is desirable for those who are not conversant with handling them, to know how it should be done. Suppose for instance in the Spring, which is the best time to import Orchids, you have a lot of *Cattleyas*, *Oncids*, *Odontoglossum*, &c. Take your Orchids, cut off all rotten bulbs and leaves, and then wash them carefully,

using precaution not to bruise the eyes at the base of the bulbs. Lay them in a shady place to dry off. Some persons then put them in a warm, shady place, on some moss, until they show signs of growth, which will not be long if the bulbs are in good condition. I prefer however, to pot them as soon as they are clean and dry. Many kinds emit roots before they do their leaves, which roots are extremely tender, and apt to be broken off in potting. I use clean new pots, and only large enough to hold the bulbs. I never try to start two or more in the same pot, as they may turn out different varieties. If specimens are wanted, it is better to put the plants in a large pot or basket after they have been established a year or so. These small pots only need a little drainage, and fresh sphagnum moss is the best material to use for Orchids, that I have found in this country. After they are potted, the first requisite to start them into growth is heat. Heat is the first motor in all vegetation. If your fires are still going, they should be put near the heat, and slightly moistened with a fine syringe. It is good to throw a newspaper or some light covering over the plants, when the sun shines on them, as it dries up the moisture too fast. A little moisture is beneficial. After they are started and the young roots begin to come, they need constant care. A good supply of sphagnum moss should always be on hand, and if the roots make their appearance outside of the pots, they should be covered carefully with clean, fresh moss. If you do not, snails, sow-bugs, roaches and even mice will be quick to discover and eat the young roots. There may be houses where none of these torments exist, but I have never seen one. As the plants grow they will require more water, which should be given with a small pot, in place of the syringe, as the latter is apt to leave water in the young growth, which will rot some kinds very quickly. After they have made their growth they should be placed near the glass, and where they can get some air and sunlight, this will mature the growth and help the bulbs to ripen. Some varieties make two growths with me in a year. This will be learned by practice. Many that are called cool Orchids, or intermediate, if kept in the hot-house in the winter, with an average temperature of 65° will make a second growth, and make good bulbs if kept without eighteen inches or so of the glass. This is a good way to hurry up the growth of small plants. When your plants get too strong for the small pots in which they were first placed, and you

wish to re-pot, if you find that they will not knock out very easily, you may be sure the roots have taken hold of the inside of the pot. Break the pot gently, with a small hammer, and let the pieces of crockery that the roots have fastened on, go into the other pot. The pot only costs two or three cents.

All pots and crocks should be perfectly clean, and if old pots are used, they should be washed and either placed on a warm flue, or in the sun to dry, otherwise the germs of the Lichens, &c., will come into growth, as soon as placed in a damp house. In potting I use the hardest burnt pots that I can get, even if they are a little black I prefer them. They do not generate filth as fast as the soft yellow pots. At one time I used pots with holes in the sides. I find that the holes only serve as hiding places for slugs, sow-bugs, &c. Noticing that one of my finest *Cattleyas*, was doing badly, I concluded to re-pot it. It was in an eight-inch perforated pot. On knocking it out, I found a colony of slugs in the drainage, and every root eaten off. The plant has not recovered, though this was more than a year ago. I think there cannot be too many holes in the bottom of Orchid pots, and the bottoms should be concave. The moss about Orchids should be allowed to get dry, once every day or two. In the Summer I water late in the afternoon, which keeps the plants moist until 9 to 10, A. M., next day, at which time I thoroughly wet the floors. In Winter I water early in the morning, so as to dry up a little by night, and never water indiscriminately. If a plant appears moist I do not give it any water. I grow small Ferns, *Selaginellas*, *Achimenes*, with the Orchids. They will always show need of water by flagging, long before the Orchids can possibly suffer. As Orchids out of bloom are not generally very attractive small Ferns add to their appearance. You can always cut off the strong fronds. *Achimenes* bulbs will remain dormant in the moss all the Winter, at the very time that most Orchids are resting. When the culture of Orchids in this country is better understood, I think they will become great favorites with amateurs who do not keep a gardener. Next to Cacti, which are the donkeys of the vegetable world, I think Orchids need less care after they are well established than any class of plants that I have cultivated.

I have a large plant of *Cattleya Forbesii*. It is in a basket made of yellow locust, *Robinia*, it has hung from a rafter in my *Camellia* house for five years.

The thermometer has been as low as 34° often, and once to 28°. I do not give it water oftener than once in two weeks. From November 1st to April 1st, it never fails to give me plenty of blooms; had eighty blooms open at one time by actual count. Alongside of it hangs a good strong plant of *C. Loddigesii*, has this day about thirty blooms open, and more coming. This has been in the same place two years. These very low temperatures are of course not desirable, and too low for Camellias. But many Orchids from South Brazil, and some Dendrobies will winter very well with a maximum of 50° and minimum of 38°, but the bulbs must be sound, and the house just moist enough to keep the bulbs plump without too much water. *D. nobile* seems to me to bloom far better if it is rested two or three months in a temperature such as I have above stated. I think with our bright Fall months we have a great advantage over European Orchid growers, and especially those of England, where they have so much cloudy weather. And our winters have a much larger proportion of sunny days than either England, North of France, Belgium or Germany. We have much to encourage us in the cultivation of Orchids in this country, and when we get to importing them direct from their homes, we will grow specimens that would do credit in any exhibition. It may be that we of the Middle and Southern States may find trouble with such as *Disa*, *Masdevallias* and others that come from a fog enveloped country; but Dendrobies, Oncids, *Cattleya*, *Lælias*, *Ærides*, &c., should and will be grown far more successfully than in Europe. We have better sunlight and sunheat, and moisture and air as needed. I think also that we will yet grow many kinds in the open air in the months of June, July, August to the middle of September. That it can be done, I know from experience. At the time of the Vienna Exposition, a friend of mine, the late Mr. A. Hack, of Baltimore, went to the Exposition, leaving his plants in care of a colored man. I promised him to look in about once a week and see how things got on. In his collection was a small lot of very choice Orchids, *Ærides*, *Vandas*, *Dendrobies*, *Cattleyas*, &c. Finding that they were doing badly in the hot dry house, and getting the thrips, I took them out of the house and placed them on tables on the north side of the house, in a place where the sun only shone about one to two hours in the morning. I improvised an awning to keep off very heavy showers of rain. They were watered every morning, and syringed in the

evening, as I was desirous of getting rid of the thrips. They all grew finely, made dark strong leaves and bulbs. And I did not lose over a dozen out of over one hundred and fifty plants, and those lost were almost gone when brought out. They were out at least ten weeks, and the thermometer ranged from 60° to 94°. It is my intention to put up a place in an open piece of woods, and try my Mexican and Brazilian Orchids in the open air. I cannot see why a temperature of from 60° to 90° should not grow Orchids as well in the United States, as in Brazil. I have seen the temperature on the Organ Mountains, where so many fine Orchids grow, 40° at day-light and 95° at 2 P. M., I would not advise any one to try Orchids in the open air, without having the place so arranged that they could be sheltered from heavy rains. I have grown *Sobralia macrantha*, *Epidendrum cinnabarium*, *E. crassifolium* and several other common varieties very finely in the open air, but I have been a little fearful of trying experiments, as my stock is not too strong.

My experiment with Mr. Hack's plants was forced on me, as I found that they would be lost if kept in the house. If nothing happens I shall certainly try some of many varieties in the open air next Summer. If I lose them I will only add one more to the list of martyrs to science.

GLASS PANELS.

BY MRS. C. S. JONES, MONROE, MO.

Another box has panes of glass slid into grooved mouldings, which form oblong panels along the front and ends of each box. These glass panels are embellished in various ways. A truly artis-



tic taste, satisfied only with genuine art work, will paint each one, and for this purpose educated and skillful hands are not required, but tube colors applied to a design, placed beneath the glass, whether it be a landscape, groups of flowers or fruit, or geometrical figures, will appear quite imposing when finished.

Take, for instance a floral design place it beneath the glass, then mix some colors with varnish (using a China plate or piece of glass if a palette is not convenient), then with a fine



camel's hair pencil, outline the various leaves and flowers with its own peculiar color; next take proper colors and make all veins, lines and fine tracery of grasses, &c., then put on the colors,



each one mixed with copal. When done and dry, paint over the whole with black, giving two or three coats, then allow to dry, and upon reversing the glass panel, your design will appear



before you in all the brilliant tints you applied, reflected back by means of the black ground.

If desired unusually brilliant, the colors should be mixed with Demar and tin-foil put over certain flowers, while the paint is still "tacky."

The most wonderfully brilliant effects can be secured by this process, and the rich, transparent tints, reflected back from the brightly planished foil, every shade of tone is made to yield its



otherwise concealed beauty, making these panels, equally beautiful, as the gorgeous, Oriental-glass-painting of the Chinese. We also use transfers of various kinds for these panels, and with great satisfaction, for they offer an easy and effective means of securing good results, at small cost of labor or money.

[We give again with this number some of the patterns of Messrs. Gleason, referred to in Mrs. Jones' articles.—ED. G. M.]

SMALL GREEN HOUSES.

BY MISS A. G.

During this and previous Winters, several small Green Houses excited my interest, and I have made a "note on it," which is here given for the benefit of those who feel a similar interest with myself.

They are all heated with anthracite coal, by stoves. The smallest is eighteen feet long, and nine feet wide. The highest part at the back of the lean-to is seven feet seven inches; from the ground to the roof, in front is three feet. The floor is dug down two and a half feet. An excavation deeper than the floor is made for the stove, which is set near the front, but not quite in the centre of the line east and west. A glazed terra-cotta pipe runs from a short galvanized pipe attached to the stove, about three-fourths of the length of the building, under a wide shelf at the front, then crosses the eastern end of the house, (the house faces south) and runs up the northeast corner nearly to the roof, and then passes outside, where it rises three or four feet. The top is closed, but several aper-

tures beneath allow the egress of the smoke. There are four elbows to the pipe, the last one resting on a wooden bracket outside of the house, where it is held securely by strong wires. A wide table runs along the front of this house. A narrow pathway intervenes between this and the stage of four steps which fills all the rest of the house, except the pathway between the two stages which runs from the main path to the door; that opens three-fourths of the way from the east end, and is placed in the north wall. From the door we step into a narrow passage-way, or shed, lighted by a window in the east end, and leave it by a door in the west end. This passage protects the house at the north, and prevents a draft of cold air when the door is opened. Three flat wooden shutters on top allow of ventilation. The glass in front is also set on hinges, and permits of more or less ventilation.

When the sun becomes too powerful, panes made of lath are laid over the roof, and are left there all Summer to protect it from hail. They make a subdued light and prevent the trouble of white-washing the glass.

The whole cost of this house was almost exactly \$100.00; the lath-work for the roof costing an extra \$4.50. It has been used nearly two Winters. The owners have had no trouble this Winter, with gas, since substituting the terracotta pipe for an ordinary sheet iron one, which in the previous Winter rusted into holes and allowed the gas to escape, and do some slight damage. This house is exposed to all the north blasts; but so far no flowers have been lost by cold. The stove is attended once in twenty-four hours, and consumes about one ton of coal in a season. It is a self-feeder, but is never filled up high enough to require the feeder.

Another house about eleven feet wide, and sixteen feet long, (we could not get the exact dimensions) faces the east, and is built up against a high back building facing west. The stove stands in the middle of a square left in the centre. The pipe to this is galvanized, and goes up straight through the roof where it is held in position by wires fastened to the wall. During high winds gas has sometimes been thrown back into this greenhouse; but no serious disaster occurred till this Winter, when a varnish which had been applied to the outside of the pipe had, unknown to the owners, found entrance, and with stringy festoons had formed a barricade, which on one dark night, sent out such a volume of gas, as

nearly stripped every leaf, from every plant in the house. Some few plants were entirely killed. The only ones escaping injury were *Amaryllis*, and *peristrophe angustifolia*, which with its gay yellow and green leaves, and bright rosy-purple flowers, seemed almost too jubilant amidst the general desolation. We had seen the whole place a short time before in a blaze of beauty. The contrast was sombre. The stately *Callas* in bud and flower, and shorn of their leaves, looked like dignified poverty. This house has a high shelf at the back, running the full length of the house, and near enough to the roof to allow only plants of moderate height to be accommodated. This shelf held some earth, or tan on which the pots were set. *Kenilworth Ivy* and *Tradescantia zebrina* were planted along the edge and fell in lovely green drapery nearly to a second shelf below, where ferns and other shade loving plants were kept. The under shelf extended front as far as the door, which was in the north end, and across the south end, meeting a shelf which extended the whole length of the front, and around again to the door. Hanging baskets were suspended to the roof, and wall-pots to the north wall. The *peristrophe* filled one of these and trailed down the side, making gayety amid the gloom, and assisted somewhat by a stately *Cyclamen* in another wall pot, the flowers of which remained uninjured, while a few leaves had been burned up completely. The floor of this house was perhaps eight or ten inches below the surface of the yard.

Another house of much less pretensions, was made of rough boards up to the height of the window, which were of old window frames fastened together, as was the roof and east end, the house facing south. The west end was partly formed by a fence and partly by rough boards. The back was a storehouse, which protected it entirely from the north. This house is heated by a self-feeding stove that stands near the door, which is in the south-west corner. The pipe runs up through the roof. Two wide shelves extend along the back of the house, one above the other, the upper being the narrowest. The lower shelf extends along the east end. A small shelf is placed high up at the west end. This is rather a cool house; the *Begonias*, and other heat loving plants, declined to flourish there till made quite warm. The plants that could bear a coolish atmosphere flourished and bloomed in exquisite beauty. The *Zonale Geraniums* Dr.

Koch and Jean Sisley took on an extra garb of loveliness and even of size in the flower; while *Oxalis versicolor* became so dainty and fairy-like a beauty as to pass beyond the knowledge of its former owner, who had never known its perfections, or its capabilities. This house required very little fuel. One night, however, it was forgotten altogether, and Jack Frost swooped down with a keen blade and smote so fiercely that the delicate plants never again lifted their heads. Great lamentation ensued, among owner and friends; but it would not restore the lost beauty, nor even build the fire.

I heard a Florist say it did not pay him to cultivate his flowers all the year, and then by a night's neglect, lose all he had gained; so when severe weather approached he sat up at night and mended his fires, and so saved when others lost. "Well lived, well saved," says the proverb.

AMARYLLIS AND ORCHIDS.

BY P. H. O., AUSTIN, TEXAS.

In the February number of the *GARDENER'S MONTHLY*, I noticed a desire of G. II., of Glendale, Miss., that some correspondent would tell a little about Amaryllids and the plants related to them now. Amaryllidaceæ and Orchidaceæ are the plants which are especially my favorites, and I was pleased with the article by Miss A. G., in the number for May, but I did not find in the list she gave, the very best (as far as my knowledge goes as yet) of the whole Amaryllis order, viz: *Eucharis Amazonica*. Before I proceed further, I must state that I try here to raise Orchids and Amaryllids without artificial heat in a sort of large pit, twenty-two by fourteen feet, the walls only elevated a foot above the ground, and the eastern half of the roof and part of the western covered with glass. In this pit I succeeded in blooming the following Orchids: *Phajus grandifolius*, *P. Wallichii*, *Calanthe Veitchii*, *Dendrobium nobile*; while I expect to bloom soon *Calanthe vestita*, *C. veratrifolia*, *Cælogyne cristata*, and some others. Now with accommodations as stated above, of the whole Amaryllis order, the easiest to flower were *Imantophyllum miniatum* and *I. Cyrtanthiflorum*, next comes *Eucharis Amazonia*, which I have had in bloom in the following months: January, March, April, July, August, September and December, though the plant with me has a decided preference to bloom in July, and December. Of Amaryllis I bloomed *Johnsonii*,

and one sent to me by James M. Thorburn, in New York, under the name of *Aulica*, which it was not, being white with two red stripes in each petal. *A. Johnsonii* is hardy here. *Ismene calathinum* I could not flower in a pot, but planted out in the gardens, it bloomed finely. *Hæmanthus*, of which I have bloomed *tigrinus*, are too coarse and clumsy for my taste. *Crinum*s, those I know are hardy here, except *C. amabile*. *Brunsvigia* *Coranica* I bloomed, but the flower lacks beauty. The peduncles of the flowers are long, thick and stiff, and the flowers too small. *Pancratium maritimum* is hardy here, but the flowers are too flimsy, and last only a single day. I tried one, *Alstroemeria*, but the difficulties with this plant are the same as with raising fine *Asparagus* here; the plant starts in Fall, and ceases to grow in mid-winter; in Spring it grows again, and finally rests during the hot Summer months. *Griffinia* I have not bloomed yet. *Habranthus pratensis* also refused to flower. Now Mr. Editor if you find this worthy to appear in the *GARDENER'S MONTHLY*, you may insert it, and in case you find such scraps of information good enough, I may perhaps send you in another letter remarks in regard to plants that are hardy here, as indigenous to Texas, but cultivated in houses in the North. [Please do.—ED. G. M.]

THE AMARYLLIS.

BY W., NORFOLK, VA.

Noticing your correspondent's communication upon "The Amaryllis," page 132 of your May number, I wish to call your attention to the enclosed photograph of a magnificent specimen of that much mixed-up family, now in the possession of Mr. Daniel Barker, of this city, through the generosity of the former owner. It was called by the person who introduced it here, "*The Cape Horn Lily*," evidently a misnomer. This bulb is four years old, and is an offset from a bulb, also an offset from the original plant now in New York State, said to fill a half-hogshead, surrounded by its many offsets and young bulbs, and a grand sight it must be, with from fifty to a hundred lovely flowers open at one time.

By comparison with *A. Cleopatra* of dwarf and compact habit, in bloom on the left, the relative proportions of this plant can be seen from the photograph, but for the sake of accuracy, I will say the bulb is fifteen inches in circumference. Leaves when fully grown three or four feet in length; flower-stalks three and one-quarter feet in

height, and covered with the delicate bloom of the Orleans Plum.

There are now nine flowers in full bloom, five on one stalk, and four on another, and a third stalk making its appearance at the base.

The cluster of flowers upon a single stalk measures sixteen inches in diameter, and each individual flower is six inches across, and six inches long. A pure white stripe down the center of each, deep-crimson; velvety petal, fringed as in *A. Johnsonii*, and a white throat complete its description. It is the grandest Lily I have ever seen or heard of, and if allied to *A. Johnsonii*, is entitled to be called *Amaryllis Johnsonii grandissima*, or *excelsissima*.

Do any of your correspondents know more of its history? Mr. Barker who has grown the *Amaryllis* for forty years, says he has never seen anything to equal it.

[The photograph shows a beautiful specimen as described by W.—Ed. G. M.]

ALOCASIA JENNINGSII.

BY MANSFIELD MILTON, CLEVELAND, OHIO.

If this *Alocasia* was to get anything like the good treatment bestowed upon the finer species of the genus, cultivators would be repaid for the extra care; for although a plant which will grow under more adverse circumstances than many of the other *Alocasias*, still it is only when good treatment is given it that its true beauty is seen. The leaves grow about six inches long, the ground-color a glaucous green, between the principal veins are blotches of black. For soil, a good mixture of peat and sphagnum moss, with a number of small pieces of charcoal through it, is most suitable; plenty of drainage is requisite, and makes the best plant when grown in a pan. During its season of growth it requires, to bring out the true markings, a high temperature, and plenty of moisture, as red-spider is a great enemy when grown in a dry atmosphere. When at rest do not keep it in a low temperature, but withhold giving too much water at the roots.

NERTERA DEPRESSA.

BY G. J. B., ST. JOSEPH, MO.

Could you or some of your subscribers inform me about growing *Nertera Depressa*. This pretty little plant with its creeping, slender, dense stems like veins, is worthy of attention. I have tried to grow it under different treatments, but have not succeeded well any way. Mr. J. B. Bjorklund, of Hampton, Va., recommended it as a bedding

plant. I bedded a few out of doors, but they soon burned out entirely in the hot, dry, exhausting atmosphere here. Again, I attempted to grow it in a moist shady house. It grew well enough for a while, but some of the plants soon began to drop off, while others stopped growing. I judge it to be indigenous to some cool humid climate. Think if well grown in a good sized pan, it would make a splendid thing for exhibition.

It would be well if all our confreres would impart to each other, what they know and find out accidentally about plants. We soon would become wiser and pay more attention to certain classes of plants, and the cultivation of many would be more popular, as in other parts of the world.

COLEUS CHAMELEON.

BY H. W. HALES, RIDGEWOOD, N. J.

Many gardeners complain of this *Coleus* "running out" or turning dark; if however, they will carefully cut out all the dark shoots, and allow only the bright colored shoots to grow, the plants will be much improved. I have several large specimens planted in the open ground that are beautifully colored, and which attract considerable attention. In propagating, it is best to use only the bright colored shoots, and to use a little wood ashes in the potting soil. Cuttings struck in the Fall, keep their color better, and make finer plants than those propagated at any other time; but they should be kept warm enough to keep them constantly growing; they will then delight the grower with their beauty and richness of coloring.

STICMAPHYLLON CILIATUM.

BY MANSFIELD MILTON, CLEVELAND, OHIO.

From Brazil this beautiful climber has been introduced. It belongs to the order *Malpighiaceae*, an order represented with a large number of genera throughout South America, some of which are very peculiar in form.

It makes an excellent pot plant when well-trained and taken care of. Mr. Clark, gardener to the late Mrs. Ward, Canton, Mass., used to exhibit at the horticultural exhibitions at Boston, as fine a specimen of this plant as I think I ever saw. It is propagated by cuttings, and grows rapidly in a mixture of good rich loam and peat with plenty of sand for porosity. The shoots require regular attention in tying and keeping the plant in good shape. The flowers

look like some of the Orchids in shape, are of a bright yellow color, and produced in umbels. It flowers during the Summer months, keeping a good while in bloom.

FUMIGATING GREENHOUSES.

BY H. W. HALES, RIDGEWOOD, N. J.

This should always be done after sun-down or in dull, cloudy weather, to avoid burning or scorching the plants. The fumigator which I use is six inches in diameter, and is simply an iron ring formed of three-eighths of an inch round iron; it stands on three legs (of same material) each three inches high. One fumigator is sufficient for about 600 square feet of glass, and the method of using is as follows: As much wood shavings as can be held in the closed hand is laid on the floor, (if the floor is of wood or any inflammable material it will be necessary to lay a piece of slate or tin first), and lighted, the fumigator is then placed over it and a good sized bunch of tobacco stems, which should be previously moistened with water to prevent blazing, on top. The greenhouse can then be shut up tight, and the apparatus will then take care of itself. This method is quite effectual and does not melt the operator to tears, which cannot be said of fumigating as it is carried on in some establishments.

EDITORIAL NOTES.

BELLADONNA LILY.—A correspondent of the *Garden* has the following answer to an inquiry:

"Amaryllis Belladonna for flowering in pots should be treated somewhat the same as *Val-lota purpurea*. After flowering it should have plenty of water, and should be nearly shut up in a close frame until it has made good flowering bulbs for the next season; then it should be gradually dried off. It does best out of doors, but to grow and flower it well the bulbs should be planted about six inches deep in a good rich border in the full sun, where they may remain for years without being transplanted, and will produce an abundance of flowers. *Amaryllis vittata* should be treated precisely the same as other *Amaryllises*. *Nerines* also require much the same treatment as *Amaryllises*; they flower chiefly in Autumn, and if properly dried off, the flowers are thrown up before the foliage. As soon as the flowering is over, the plants should be placed in a close

frame and kept well syringed, so as to make good flowering bulbs for the following season."

Some of our Baltimore gardeners must know how to flower them, as there were very fine specimens in bloom at the exhibition of the Maryland Horticultural Society, during the meeting of the American Pomological Society.

NEW OR RARE PLANTS.

AZALEA, DUKE OF EDINBURG.—The *Florist and Pomologist* has a colored plate of this. The size is the chief novelty, each flower being four inches across. The color is brick red.

ASPARAGUS PLUMOSUS.—What is known in the cut flower trade as "Smilax" is so popular that the following note of a neighboring novelty from the *Gardener's Chronicle*, will prove interesting.

"An extremely elegant species of *Asparagus*, rather widely distributed at the Cape and in Natal, from which latter province it was introduced to the nurseries of Messrs Veitch by Mr. Mudd. It is a climbing under-shrub, with very numerous, slender, glabrous green spreading branches. The true leaves are in the form of minute deltoid scales with an acute ultimately reflexed point. The cladodes, or false leaves, are grouped in tufts, each one is from one-eighth to one-quarter inch long, bristle-shaped, and finely pointed. The elegance of its finely-cut false leaves rivalling or even excelling the most delicately cut Fern, will render this plant a great favorite, and for decorative purposes, bouquets, &c., it will have the advantage of greater persistence than Ferns.—M. T. M.

ACALYPHIA MACROPHYLLA.—A plant from the South Sea Islands, belonging to the Order Euphorbiaceae, with foliage showing a great variety of tints. Its stem and branches are furnished at short but regular intervals with exstipulate leaves, having hairy petioles from six to eight inches long, from which the leaf expands into a bold and broad blade of the obcordate acuminate form, serrate and prominently veined. The leaves attain a length of from twelve to fifteen inches, with a breadth of from ten to twelve inches. The coloring and markings of the leaves are exceedingly varied, tints of red, yellow, pink, brown, and green, may all be found upon one plant. The coloring is most developed in the older leaves; in some, blotches of red or yellowish red are scattered over the whole leaf; in others, a portion

sharply marked off by the prominent veins is colored; in others again the two preceeding characters are combined. The general outline of the plant is bolder and the color more varied than *A. tricolor*.—Messrs J. Veitch & Sons, Chiswick, London.

plants from the East, but they never did anything with us, neither has it bloomed any. I should be very thankful for your instruction; or perhaps, some of your correspondents might be more familiar with this little plant."

[The plant known in nurseries as *Rondeletia*.



ACALYPHA MACROPHYLLA.

SCRAPS AND QUERIES.

RONDELETIA ANOMALE.—T. J. B., writes: "I would be very glad to find out more about *Rondeletia anomale*. I received a few

anomale, blooms profusely all the Summer when growing in the open ground.—ED. G. M.]

DOUBLE RICHARDIA.—W. M. M., Oswego, N. Y., writes: "I have now in blossom a double flower on the *Richardia alba maculata*. During the past Winter this form has occurred several

times among my *Richardia Æthiopica*; but I have never heard of it on the *R. alba maculata* before."

[It is not common; but considered to be oftener seen on *R. maculata*, than on the *R. Æthiopica*.—ED. G. M.]

FRUITING OF FICUS PARCELLI.—F. B., of Jackson, Mich., writes: "We have a plant of *Ficus Parcelli* in our collection, which is showing fruit. I have not heard of this plant fruiting, and would like to know through the *GARDENER'S MONTHLY*, if such is the case. The fruit is about the size of a hazel-nut, and in form like the common Fig *Ficus Carica*."

ARCHBISHOP WOOD AND GUILLON MANGEL-LEON GERANIUMS.—G. J. B., writes: "I have

grown Guillion Mangelleon, and Bishop Wood Geranium in and out-door side by side. There is not in habit, foliage, petiole, truss, or color the slightest difference. They are unhesitatingly both alike, and therefore it would be more practicable to adopt either one or the other name; not having one variety circulating under two names."

[These two varieties; one raised in America, and the other in Europe, are not quite the same; but as our correspondent says, so nearly alike that it is not desirable to continue them both in circulation. As Archbishop Wood seems to have been the first in the field, and a much easier name to handle, we propose to keep this one and let the other drop.—ED. G. M.]

FRUIT AND VEGETABLE GARDENING.

COMMUNICATIONS.

FRUITS IN IOWA.

BY SUEL FOSTER, MUSCATINE, IOWA.

I am inclined to say a good thing for our season and crops in Iowa, up to this 8th of July. Never had a better season for Strawberries. Some places they were injured by frost while in bloom. The wet weather through the entire month of June prolonged their harvest, and weakened their market down to seven and eight cents retail. And by the 15th of June the Raspberries came; they are also holding out yet. We have for Blackcaps, Doolittle and Mammoth Cluster, Red, Philadelphia and Turner. There is not much difference in the quantity produced by the above fruit; but the Turner is so much superior in quality, that they bring from twenty to thirty-three per cent. higher, where the market has once got a taste of them. They stand our Winters better than any Red Raspberry I ever had. Our strawberries are Wilson, Greene Prolific, Turner, Charles Downing, Kentucky. A new one originating at Waterloo, Iowa, called Red Jacket, very productive, which I intend to try next year, also Crescent.

Cherries very abundant, at \$1.00 to \$1.50 per bushel. They are Early Richmond, and Late English Morello. The later is equally hardy and

productive with E. R.; but a far better cherry, two to three weeks later, thus prolonging the season.

Grapes promise abundant. Apples and peaches, only medium.

The weather is hot, 90°; and haying and harvest is at hand, with bountiful crops.

THE DWARF JUNE BERRY.

BY MR. FRANK ADAMS, AKRON, OHIO.

You asked the question last Winter, in one of the numbers of your *MONTHLY*, "What is a Dwarf June Berry?" stating that you had never seen one, and did not know that there was such a thing. I have several of them growing on my grounds. The original one which I planted out some four years since, is now a clump of stalks from one fourth of an inch to an inch in diameter, and from one foot to seven feet high. I presume there are seventy-five stalks or shoots. When in bloom in early Spring, it is one mass of white flowers, and then another mass of fruit. I inclose a sample. When fully ripe, they are nearly black, and as good to eat as a Whortleberry; but it is next to impossible to keep them from the birds as they go for them as soon as the berry begins to turn red. These which I inclose are not ripe, but enough so; so you will see what they are. If a man had an acre of them, and could keep the birds from them, he would

have a sight to behold. I don't know how many bushels he would get; but I think I might state within bounds, 200 bushels. I hope these may reach you in good condition, so you can judge for yourself.

THE SMALL FRUITS.

BY T. G., HAMILTON, ILLINOIS.

Here in the Northwest, the yield of small fruits has been enormous—especially of Raspberries and Blackberries; so much so, that the bottom has fallen out of the market in most localities. A late frost did some injury to them in certain sections, and hailstones cut them off in small areas; but take the country as a whole, and the like has seldom been known before. Nothing—even of the most tender sorts—was killed by the past mild Winter. Of Blackberries, Lawton, Kittatinny, and others usually tender, coming out about as heavily laden as the Snyder, or the wild plants of the woods and fields. Last year my Lawtons, Kittatinnies and Missouri Mammoths, were killed back three-fourths of their length, yielding only a few berries near the ground. The Snyder went through unscathed.

In this region where hardiness is a desideratum, the Snyder is to be commended; yet South where Kittatinny and Lawton will stand the Winter, I should give them a decided preference. Not quite so prolific, perhaps, they will average one-half larger in size, and are equal if not superior in quality. Here, we can count on a crop of Snyders annually—of Kittatinnies twice in three years—of Lawtons and Missouri Mammoths, about every alternate year.

A word as to the Crystal White and Hoosac Thornless. What they may do elsewhere I say not; but here they are worthless. The former is execrably bitter—a good substitute for quinine in taste—and neither crystal nor white. The latter is small, and though less bitter than the other, is of poor quality, and not worth the handling.

THE SHARPLESS SEEDLING.

J. L. DILLON, BLOOMSBURG, PA.

A description for your columns of this valuable new fruit the Sharpless Seedling Strawberry, may not be amiss.

This berry was raised from mixed seed of the Jucunda, Charles Downing, Wilson and Colonel Cheeny, by Mr. J. K. Sharpless. From the first fruiting, it has attracted the attention of all in

this vicinity, who know the qualities of a good Strawberry. The plant is immense; foliage very dark green and at present writing (July 15th), shows no sign of sunburning; so common in most varieties. It is very productive. The fruit stems are large and stout, and generally have on fifteen to eighteen berries. The berries are very large; far surpassing the Great American, when grown side by side. A fruit stem with five ripe berries, one measuring twelve and a fourth inches in circumference, and weighing two and a half ounces; and the other four from the size of a hickory nut to that of a walnut were placed in alcohol and sent from Berwick in this county, to the Paris Exhibition. Berries six inches in circumference, and weighing one ounce have been very common. They are very large to the last. My last picking, four quarts, contained three one ounce berries. The color is bright cherry red, smooth and waxy, resembling the Jucunda. Flesh solid, firm, sweet and delicious. The berries, or young plants, are inclined to be irregular, and it is the only objection we could find to the Sharpless; but even this is hardly noticed the second year, when the plant is loaded with fruit.

THE DWARF JUNE BERRY.

BY B. J. SMITH, CAMBRIDGE, MASS.

If this hasty note is of any use, it is at your service:

Saturday last, July 13th and 20th—the writer exhibited at weekly exhibitions of Massachusetts Horticultural Society, fruit of *Amelanchier Canadensis*, *oblongiflorum*, (Torrey & Gray), June Berry. I obtained the plants some six or seven years ago in Davenport, Iowa, since which time have grown them in my garden. July 20th, Massachusetts Horticultural Society, awarded me their Silver Medal for the introduction of this fruit into Massachusetts. The fruit was tested by a large number of ladies and gentlemen and pronounced excellent quality. In our garden it succeeds admirably; bears profusely; very attractive in blossom, foliage and fruit; flavor mild; rich sub-acid; very good eaten raw or cooked, and certainly promises well to be an acquisition to our collection of small fruits; it must be perfectly ripe to be appreciated. It is more attractive to birds than any of the small fruits; hence the importance of guarding it from their ravages; this I have done by the use of a couple of rather formidable scare-crows and by changing their positions two

or three times a day; if allowed to remain long in the same place the birds become accustomed to them and they are useless. I succeeded in securing the fruit in excellent condition.

ALEXANDER, AMSDEN'S JUNE, AND EARLY BEATRICE PEACHES.

BY R. J. BLACK, BREMEN, FAIRFIELD, CO., O.

The first two are ripening now, July 4th. They began June 28th. Early Beatrice is following close, but is behind; and it is much more behind the former two in size and attractiveness, than in time of ripening. We relinquish it without regret, since we have Alexander, and Amsden's June. We cannot do without either of these, though they are very much alike, both in tree and fruit. Glands globose, and flowers large; the same in both. Alexander has probably somewhat the advantage in size, while Amsden may be the greater bearer. Not that Alexander is at fault in this latter respect; but Amsden is a profuse bearer, requiring thinning. Yet in another season this may be reversed. Both are of good size, very attractive, and of "very good" quality. They are from original sources, and undoubtedly true to name.

For latitude 39° 40', fine ripe Peaches the first week in July is certainly a long step in advance of twenty-five years ago, when the writer had fairly begun to collect fruits.

CULTIVATION OF THE STRAWBERRY.

BY P. BARRY.

To cultivate the Strawberry for family use, we recommend planting in beds four feet wide, with an alley two feet wide between. These beds will accommodate three rows of plants, which may stand fifteen inches apart each way, and the outside row nine inches from the alley. These beds can be kept clean, and the fruit can be gathered from them without setting the feet upon them. We find from experience that no more convenient mode can be adopted than this. The ground should be well prepared by trenching or plowing at least eighteen to twenty inches deep, and be properly enriched as for any garden crop.

The season for planting depends upon circumstances. It may be done with safety from the time the plants begin to grow in the Spring, until they are in blossom. And again in the Fall from the time the young plants are sufficiently rooted, until the freezing of the ground. It is well, however, to plant at a time when the plants

will at once commence growing. If in warm, dry, weather, as August or September, it is necessary to water the ground thoroughly before planting, and then to shade the plants until they have begun to root. The culture subsequent to planting consists in keeping the ground among the plants clear of weeds, and frequently stirred with a hoe or fork, to keep the runners closely pinched until after the fruit is gathered; and to mulch the ground among the plants before the fruit begins to ripen, with two inches deep of cut straw or short grass mowings from the lawn, or any thing of that sort, to keep the fruit clean and the ground from drying. In exposed situations or where the winters are severe, with little snow for protection, a slight covering of leaves or litter will be of great service. This can be raked off and the beds dressed at the opening of the growing season. A bed managed in this way will give two full crops, and should then be spaded down, a new one having been in the meantime prepared to take its place.

For field culture, the same directions with regard to soil, time of planting, mulching, as given above for garden culture are applicable when planting on a large scale. We usually plant in rows three feet apart and the plants a foot to a foot and a half apart in the row. In this case most of the labor is performed with horse and cultivator.

THE DYEHOUSE CHERRY.

BY R. J. BLACK, BREMEN, OHIO.

In my short note, at foot of page 240, August number, which you kindly copy, the second word should be *send* instead of "saw;" and at the top of next page (241) second line, the word "kind" should be *pit*. The sentence will then read: "You will notice the pit is very small, exceeding even Shannon in this respect." The fruit itself is of medium size. I observe that another competent authority, "Notes from the Pines" (*American Agriculturist*, August, 1878, page 302, 1st column), is also well pleased with the fruit, considering it superior to "Early Richmond," than which it is "a week or ten days earlier." His young trees, received several years ago from "a gentleman in Tennessee" and not "six or eight feet high, were fairly filled" with the fruit. The success of this fine Morello in Eastern New York, Central Ohio, Kentucky and Tennessee, is certainly noteworthy.

MALACOTON PEACHES.

BY JUDGE W. W. HOWE, NEW ORLEANS.

The Lake of Canandaigua, in western New York, is famous not only for its beauty, but for its historical association. The region in which it lies was once the home of the Senecas, the most numerous and powerful tribe of the Iroquois confederacy. One of their favorite council grounds was the fine declivity which slopes down to the foot of the lake from the northwest, and which is now the site of a handsome town. As early as 1656 the Jesuit, Chaumonot, visited the Senecas as a delegate from the Onondaga mission, and wondered at the beauty of the country, the multitude of wild pigeons and rattlesnakes, and the abundance of fish for fast days, and of venison for days of feasting. In 1678 La Motte and Hennepin, sent forward from Kingston to Niagara, by La Salle, visited the same tribe, at a place now called Victor, but a few miles from the lake, and met there two Jesuits from Canada, one named Rafflex the other Julien Garnier. Passing last summer on a point of land which projects into the lake, about three miles from its head, I was naturally struck with the changes which had occurred since the early days when Chaumonot and Hennepin explored or visited that region. The Iroquois were gone. So far as the casual observer could determine, there was not a trace of them left, except what is to be found in the nomenclature of lake, hill or river. Their place is supplied by another race. The inhabitants of the neighborhood and the visitors at the point were descendants of Germans, Anglo-Saxons and Gauls. The animals were the descendants of immigrants. The horses were derived from England or Normandy, the cattle from Durham, Devonshire or Holland, the poultry from China. There were two dogs, one of whom traced his lineage to the Isle of Skye and the other to the Monastery of St. Bernard.

The very trees and flowers were chiefly of foreign descent. Not, to be sure, the great Elm, which is the chief glory of the place, nor the Limes which, as in the days of Virgil, attracted the industrious bee, nor the maple that stands above the upper boat-house. But far more numerous the Apple tree came from Kent, most likely; and so did the Cherries, the Plums, and Pears from France; and the Peaches—it is said they came from Persia, with the Aryan race, following in the pathways of discovery, of conquest and of civilization, until at last their des-

cendants crossed the Atlantic and took their place in the gardens of North America as a favorite fruit.

Among these Peaches at the Point is a variety whose name is suggestive of this long descent. It is called the Malacatune, and according to Webster this spelling is permissible. Some of the farmers call it Malkatoon, and in so doing, come nearer, I think, to the real origin of the name. Some botanists call it Melocoton, and tell us, with an appearance of learning, that the name is derived from the Italian Melocotogne, or Quince-tree, and that, in turn, from the Latin *Malum Cotonium*, or *Malum Cydonium*, to wit: the Apple of Cydonia in Crete. They might have added that the Cretans were proverbially inaccurate in their statements, and that perhaps this verbal pedigree was a little doubtful.

Now this Malkatoon Peach is very handsome. When the poet said of his love.

Her cheek is like a Cathrine Pear,
The side that's next the sun,

he might just as well have used the Peach in question to illustrate the beauty of a brunette, in so lovely a manner are red and brown mingled in its coloring.

I desire to offer another theory in regard to the derivation of its curious name, a derivation which comports extremely well with the history of the fruit, coming as it has from those mountains, valleys and table lands of Central Asia.

The recognized founder of the Ottoman Empire was Othman or Osman, the son of Ertoghoul. It is after him that the Turks call themselves Osmanlis, the only national name they recognize. In the year 1288 he succeeded his father as the chief of his race. He is sometimes called the first of the sultans, but neither he nor his two immediate successors ever assumed that title. He was an independent emir, reigning over a principality in Asia Minor, corresponding at first with the ancient "Phrygia Epeictos," but greatly extended during his life of war and conquest. His name being translated, signifies Bone Breaker and Royal Vulture, and he justified its cheerful meaning by many naughty deeds.

It seems that when Othman was young, a pious and learned shiek, named Edeballi came to live at Itbourouni, a village near Eskircheed. The young emir used often to visit this holy man, doubtless to talk theology, and after a time he discovered that the saintly shiek had a fair daughter. In a moment Othman fell in love, and prayed for that daughter's hand. The holy father, prudently thinking that the station

of the young prince was too high for that of the maiden, refused his consent, and Othman was plunged into the deepest dejection. The Bone Breaker was like to break his heart. Seeking to console himself in the society of his neighbors, he described the charms of the young woman so eloquently that one of his princely companions, the chief of Eskirheed, fell in love with her himself on mere hearsay, and demanded her hand from the father.

This was also refused, and so alarmed did the old sheik become at these importunities that he quietly removed from the neighborhood.

The chief of Eskirheed and Othman were sworn rivals, and hated each other in good old fashioned style. One day while Othman was visiting at the castle of a friend, his rival suddenly appeared with a considerable force and demanded his surrender; but while the parley was going on, Othman and his brother, with a few companions made a sudden sally, and with such success that he drove the enemy from the field.

He had not yet seen the maiden of his heart. For ten years longer he pined without avail, but at last, while visiting at the old sheik's house, (for the old man, though he denied his daughter, could not refuse an Oriental hospitality) Othman dreamed a dream.

He saw the full moon, typical of the maiden's face, rise from the father's breast and sink upon his own. From it sprang a mighty tree, which overshadowed all that portion of the world. The Crescent shone through its branches, and underneath was many a goodly city with minarets, whereupon orthodox Muezzins called the faithful to prayer. Every leaf of this tree was shaped like a scimitar, and at last there came a mighty wind, which turned their points straight towards Constantinople. That city, placed at the junction of two seas and two continents, seemed to the dreamer like a diamond, set between two sapphires and two emeralds, to form the most precious stone in the ring of universal empire. As he was about to place this ring upon his finger, he awoke.

Of course, this dream did the business. There was no resisting a candidate for matrimony who could see such visions as that. The pious sheik gave his consent, the maiden gave hers, and Othman was married. His fair wife bore him two sons, Oiclean, his successor, and Aladdin, the celebrated vizier. Her grandson was Amurath the first.

Othman lies buried at Brusa. His banner and his terrible saber are preserved among the regalia of the empire, the girding of that saber on a new sultan being the equivalent of a coronation. His character was fierce, his conquests bloody; but around the story of his life, like a wild rose springing from the battle-field, will ever bloom the episode of the fair woman whom he wooed with so much devotion and to whom he was as faithful as any Turk could be.

Perhaps you think we have wandered rather far from the Peach-orchard on Canandaigua Lake. Not so very far. The name of the maiden whom Othman married was Mahlkatoon. It signified Treasure of a Woman. So sweet and beautiful, would it be surprising if her name was given to one of the fairest of the Peaches that grew on her native hills, and that the farmers of Western New York, when they praise the Mahlkatoon Peach, are unconsciously celebrating the memory of Othman's bride, and perpetuating the fame of Amurath's grand-mother?

TIME TO BUD THE PEACH.

BY CHAS. BLACK, HIGHTSTOWN, N. J.

After many years' experience in budding the Peach and having had the charge of the budding of millions, I find that early budding invariably does the best, say from August 1st, until September 1st. Many suppose that if budded too early they will start to grow, but the percentage is so small that it amounts to nothing. If only a few are to be budded, the best time is about the 10th to 15th of August, but when there are large quantities, it is best by far to begin as soon as the trees are large enough, if it is in July, than to put off too late. When cold nights commence in September, the sap is checked, and when trees are on sandy soil especially, they soon stop growth; and if buds unite they do not start as well or vigorous in the Spring. There are many thousand trees lost by late budding, and those not already done, should be done in the next ten days if they are expected to do well. There are exceptional seasons, but this has been my experience in the last fifteen years.

EDITORIAL NOTES.

LATE STRAWBERRIES.—F. F. Mercer, of Catawissa, thinks he can make Strawberries that usually bear in June put off the matter till July. This season is the first year of his experi-

ment, and he regards the results as promising. He had good fruit in July.

CRESCENT SEEDLING STRAWBERRY.—The Crescent Seedling originated with William Parmelee, New Haven, Connecticut, in 1870.

CODLING MOTH DESTROYERS.—Mr. P. H. Foster, Babylon, N. Y., writes: "I think you did not understand my meaning when I wrote you, in the August number. I thought it an outrage to procure a patent on such a manner of capturing the Apple worm. Such mode I have practiced for years, and have not been called upon to pay royalty, and the same has been in print a thousand times, and so far as the poisoning the bands are concerned, I have used that mode in 1877, and have thoroughly tested it the present season, and have found in my experiments an entire failure, as the worm does not appear to swallow after it leaves the fruit. The fact is, our managers of the Patent Office must be wanting in general intelligence, when an individual can obtain the exclusive use of any mode of proceeding that has been in use as long as the one in question, and obtain the legal right to prosecute those who have used it for years."

FRUIT IN EUROPE.—The Apple and Pear crops have failed in England.

CURCULIO IN CALIFORNIA.—A California fruit grower says he believes the curculio has not yet made its appearance in that State. The occasional failure of the Apricot is believed to be due to other causes.

PEACHES IN ENGLAND.—In England Peaches will only ripen their fruit when the trees are trained against a sunny wall or fence. Great care and skill are required in this training, or the parts nearest the ground would be soon bare of young wood, from which alone the Peaches come. The branches are trained fan-fashion, and so directed by the trainer that under no circumstances would one branch cross another, no matter how far they grew. The following from the *Garden* gives an account of a fine one so trained:

"A Peach tree at Sunbury Park measures twenty-two by twenty-two feet, equal to 484 square feet. Suppose we allow an average of eight to a square foot, the result would be 3872, or 322 dozen Peaches. An Elruge Nectarine in the same house covers 225 square feet, and carries 150 dozen splendid Nectarines. The trees are about fourteen years old, and perfect specimens of good cultivation. In the same range

there are two large vineries, the crops in which are equally good."

POPULAR PENNSYLVANIA APPLES.—The Pennsylvania State Board of Agriculture is doing good work regarding the collection of statistics of the State. Secretary Edge, in his July blanks, called for information regarding what each respondent would, from his own knowledge, regard as the three best Apples of three seasons, not particularly as market fruit but for personal use. The following are the responses:

SUMMER.		Queen,	61 N. Spy,	78
E. Harvest,	192	Fallowater,	54 Smith's Cider,	42
Red Astrachan,	124	Gravenstein,	18 Rox. Russett,	40
Bough,	50	York Imperial,	10 King of Thompk.	
Townsend,	18	Wine Sap,	8 County,	40
Penoni,	10	Doctor,	6 Seek-no-further,	38
Douse,	6	Strawberry,	6 Romanite,	18
Red Streak,	6	Vandelever,	6 Swaar,	8
Caleb,	4	Porter,	6 Spitzenberg,	8
FALL.		Fameuse,	4 Fen Davis,	4
Maiden's Blush,	104	WINTER.		
Smoke House,	94	Baldwin,	118 Ridge Pippin,	4
Rambo,	70	R. I. Greening,	98 Rome Beauty,	4

These lists are extremely useful. They do not, of course, show that the most popular kinds, as shown by the number of votes are the best. Perhaps hundreds of those voting for Early Harvest, Maiden's Blush, or Baldwin, never heard of Fameuse, Ben Davis, or Ridge Pippin, and those or some others might, perhaps, be as good as the best. But if one wants to plant something that is pretty good, and is willing to risk their not being perhaps the very best, he will not go far wrong in taking up with the popular favorites.

NEW OR RARE FRUITS AND VEGETABLES.

NEW FOREIGN GRAPE, "WELCOME."—Mr. James Ricketts, Newburg, N. Y., writes: "I send you, this day, by express, pre-paid, one bunch of my new exotic seedling Grape, Welcome, so named by the Examining Committee of the American Pomological Society, last year, in Baltimore. It is a seedling of the Pope Hamburg, fertilized by the common Hall Muscat. A good setter and splendid growth, foliage like Hamburg. I will send you a few grapes of the old Black Hamburg, for comparison, that was raised in the same house. I think it outranks any of the old varieties for flavor. If you can get any of the different kinds I wish you would make a comparison. I will send you one of the vines this Fall for trial. The fruit I send have been ripe over one month in a house.

[The Black Hamburg Grape sent for comparison was a very poor specimen of that variety. Fortunately, Mr. Rickett's new seedling does not need comparison, having positive merits of its own. We have rarely tasted a foreign Grape with more honeyed sweetness. The berries are in size about as the Black Hamburg, and the bunch is wide at the top, tapering rather suddenly to a long slender point. The berries are rather loose on the bunch. So far as the character of the fruit is concerned, it may be regarded as a valuable addition to our meagre list of first-class vinery Grapes.]

SALLIE WORRELL PEACH.—From C. W. Westbrook, Wilson, N. C. This came to hand in excellent order, on August 10th. They were medium size, white flesh, small freestone, very juicy, and of an agreeable flavor. Mr. W. says that the fruit generally reaches fourteen inches in circumference, and that twelve inches is its general size. It is regarded by good judges as the finest flavored Peach in the Carolinas. It was found on the ground of Mrs. S. Worrell, near Wilson, N. C. It is impossible to speak of the absolute merits of a Peach from a sample of the fruit alone. It appears to us to warrant all the good things Mr. W. says of it.

SCRAPS AND QUERIES.

CLAPP'S PEARS.—The article on the Past Century of Pomology was made up from the entry book of the Centennial, in which "J. Clapp" is recorded in connection with the seedling Pear. But a correspondent writes it should have been "F. and L. Clapp."

STRAWBERRY LEAF INSECT.—C. J. B., South Framingham, Mass., writes: "An insect, new to me, has been very destructive among my Strawberry plants, in one place having nearly killed a three-foot strip of vines which were thrifty and vigorous at the time of bearing. They have seriously injured the new runners. Being inconspicuous, and working on the under side of the leaves, their presence was not suspected until the mischief, which is rapidly effected, was done. The insect is a beetle, an eighth of an inch in length, varying in color from dark brown to jet black, the latter predominating. Unlike the little turnip beetle or fly, they do not actively attempt to escape. Tomorrow I am going to apply Paris green to

some of the plants to see how they will bear it, in order to protect myself, if possible, next season. I find that caution is necessary in the use of that poison, as an over-dose killed some of my ten weeks' Stocks and also Mignonette. Have you ever been troubled by this pest? Can you tell me of a remedy? I enclose two leaves which show the ravages. The insects, after having done their work, are gone, therefore I cannot send you a specimen. I send you, however, the figure."

[This may be one of the beetles of which we have read as being destructive to Strawberry leaves, but these are the first specimens of their work that we have seen. The leaves are skeletonized as in the case of Elm leaves, with which most tree growers are familiar.—ED. G. M.]

GRAPES AND GRAPERIES.—E. H. II., Easthampton, writes: "Please to tell me the treatment of graperies after bearing. Shall I simply give plenty of air? Shall I allow the ground to dry? Shall I continue to pinch back the shoots? Will it be injurious to the Grape vines to use the graperies for flowering plants like Carnations, at a low temperature? In that case, would it do to leave the vines in position? They are too old and stiff to put under a bench, have been usually cut loose and allowed to hang, but would be then in the way if I use for flowers. What is the best and most practical book of Grapes under glass? I have Downing's Fruit Culture, and supplement to Henderson's Floriculture, good enough but not complete enough. Sent for Fuller's but it proves to be devoted wholly to native Grape. Which author on Roses is best for one who wants a practical treatise? don't care for a historical. Our library has scarcely any books of horticulture. If you will answer any or all the above questions you will confer a great favor on a constant reader of the GARDENER'S MONTHLY."

[1. Chorlton's Grape Grower's Guide will probably give you all the information you need on these matters. It is not usual to pinch back much after the fruit has matured, but the whole is left to mature, and all pruning left till the leaves are ripe. Strong, for Roses.

2. Some persons could succeed in growing flowers and Grapes in the way you desire, but it is wholly a matter for local decision. Unless one has already had some experience, the first attempts would probably not be ranked as a complete success.

The best course for our correspondent would

be to try on a small scale at first, and watch the results. He would learn from this in what direction to extend his field. All we can say is

that while a few succeed with flowers and Grapes in the one house, the majority regard it with disfavor.—ED. G. M.]

FORESTRY.

COMMUNICATIONS.

THE VARIETIES OF CATALPA.*

BY E. E. BARNEY, DAYTON, OHIO.

The MONTHLY has so extensive a circulation, and its editor is such high authority, on all matters pertaining to Forestry, that I fear a wrong impression may be made by his answer, in the August number, to an inquiry as to the relative merits of the early and late blooming Catalpa. While it is true that there is but one species of Catalpa native to North America, it is equally true that there are two distinct varieties, having clearly marked and well defined characteristics. There is a difference only, of from one to six days, in time of blooming of trees of each variety, in the same locality, dependent on soil and exposure, yet, there is fully three weeks difference in average time of blooming of the two varieties.

This year, the early was in full bloom in Dayton, Ohio, June 4th, the late blooming June 25th to July 1st. In Columbus, Ohio, and Terre Haute, Indiana, on the same line of latitude as Dayton, each variety was in bloom at the same time and with the same difference in time. In Ullin, Pulaski County, Illinois, twelve miles north of Cairo, the early blooming May 15th, the late blooming June 5th. Both varieties are native Forest trees there. Arthur Bryant, of Princeton, Illinois, has the early variety, grown from seed gathered at New Madrid on Mississippi river in 1839,—trees now two and a half feet in diameter,—that blooms fully three weeks earlier than the common variety in same vicinity. Suel Foster, of Muscatine, Iowa, has trees of both varieties blooming fully three weeks apart. Dr. John A. Warder, of North Bend, Ohio, has both varieties, that are three weeks apart in time of blooming. John C. Teas, of Carthage, Missouri, and Robert Douglas & Sons, of Waukegan, Illinois, have trees of both varieties, blooming three weeks apart. This list might be increased to hundreds. Dr. Job Haines introduced the early variety into

this vicinity, from seed gathered from two remarkably fine trees he found growing two miles south of Dayton. Soon its merits began to be known and appreciated, and its marked difference from the common variety pointed out. Dr. John A. Warder and John C. Teas, from its superior beauty, named the early variety, *Speciosa*. Subsequently, Suel Foster discovered that it would resist severe frosts, much more than the common variety; up to and even beyond 42° north latitude, its minutest twigs remained uninjured, at a temperature fatal to the common variety. We therefore named it the Hardy.

When quite young, the *Speciosa* has light colored bark, as it grows older, the bark gradually darkens, the outer coat thickens, becoming seamed, furrowed, rough, and dark colored, resembling somewhat Elm or Black Locust of the same age. When planted singly for shade or ornament, it generally grows tall, straight, with a compact top, and is altogether a shapely, handsome tree; the flowers whiter and larger than the common; the seed pods, fewer but longer and larger.

The later blooming or common variety, and the only one described in the books so far as I know, when quite young, is dark colored, has a light bloom on the bark, that readily rubs off. As the tree grows older, the bark becomes lighter colored. The outer coat is thin, comparatively smooth, and in small scales or flakes. When planted singly, the common variety is often leaning, crooked, scragly, scarred in some places, and rotten in others, unsightly, unthrifty, and misshapen. Yet there are some very handsome trees of this variety on our streets and in our yards. Young trees of this variety, even in latitude 40°, are liable to be killed down by very cold weather. The severe Winters of 1876-7, killed 2000 young trees of the common variety in this vicinity. They were cut down to the ground in the Spring, and transplanted. They shot up a straight stalk, and grew finely last season. They are growing vigorously this

season, and will probably resist the cold Winters of this latitude hereafter. When planted further north, the outer limbs of old trees are liable to be killed by the frosts.

When planted in groves, four feet apart each way, the common Catalpa seems to grow erect, tall, and well shaped. There is, seven miles south of Dayton, a handsome grove of Catalpa of the common variety, twelve years from the seed, that are over thirty feet high, and four to eight inches in diameter two feet from the ground. The trees are erect, thrifty and handsome.

The remarks of the editor, in the article referred to, in regard to cutting down young Catalpa trees to the ground, after two or even three years growth, are very important, and should be carefully noted by all wishing to grow fine trees of either variety.

For shade or ornament, I would certainly plant *Speciosa*. For groves north of 40°, I would plant *Speciosa*. South of that I am not certain; but hope to gather such information, within the next four months, as will enable me to determine. In the meantime, I shall be under very great obligation to any one, having any facts or information, pertaining to the Catalpa, if they will communicate them to me at Dayton, Ohio.

[The bark of the two forms are very different; we are much obliged to Mr. B. for the opportunity of seeing the specimens. There is no doubt about there being two distinct varieties.

The point of our former remarks was in relation to a prevailing impression that the smooth barked form was not hardy. It is really one of the hardest of the indigenous trees of Pennsylvania. It is quite possible, as Mr. B. points out, that the rough barked variety has some special merit; but this is a matter for actual testing, and cannot be improved by urging that its neighbor, which we have all of us known to be so good, is all at once worthless. If we are not mistaken, the writer of this recently saw some noble Catalpa trees of the smooth barked variety, at Rochester, New York, and surely a tree which does well in that climate, deserves to be called "Hardy," as well as its rougher barked neighbor. It is possible there may be some situations better adapted to one form than the other; all this is a matter for experiment; but that a tree which has for hundreds of years been a hardy denizen of our Northern forests, should all at once be thought

"too tender for a timber tree" is absurd. Mr. Barney's paper gives the exact facts, and is just to the point.—Ed. G. M.]

EDITORIAL NOTES.

THE RED WOOD IN AUSTRALIA.—While Californians are hankering after the Eucalyptus, the South Sea Islanders are said to be making extensive plantations of the Red-Wood, of California,—*Taxodium sempervirens*.

AMERICAN FORESTRY.—The *London Journal of Forestry* thinks that the work recently compiled by Dr. F. B. Hough, is a marked compliment to British foresters in this that he has copied "so largely from British works on forestry and the experience of British foresters"—and it has just reason to be proud. It is to be hoped some day, American experience may claim the same compliment in some work devoted to practical American forestry. There is an immense amount of useful experience in America, running over a hundred years back awaiting some friendly hand to take advantage of.

In contrast the *Nebraska Farmer* thinks it is time to ask something about "American Forestry, now that Dr. Hough is to visit Europe at an expense of \$6,000, in order to teach Americans how to plant forest trees. Nebraska and Kansas can communicate more practical information on that subject, free of charge, than Dr. Hough will learn and communicate in a lifetime."

With which we quite agree. We very much doubt whether Dr. Hough or any other gentleman, however excellent, can tell us more than the many complete works on European forestry already tell us; while on the other hand the actual facts of growth, the adaptation of soils and climate to special kinds, and hundreds of other practical points that we want to know, can only be learned by seeing what has been actually done in our own country. An American "Forester" would learn more by a visit to American nurseries, and American Forestry plantations in six months, than he could by plodding over Europe all his life-time. We do not dispute that there may be some profit in the end of such a visit, but it is a beginning at the wrong end.

THE RED PINE.—A correspondent of the *Michigan Farmer*, thus writes of this Pine. There is not much demand for this tree, in the

nursery trade; yet we know of a few progressive nurserymen who would gladly try what sort of an ornamental tree it would make if they could get any one in the districts where they grow to collect a little seed; but so far, none of them have succeeded in getting any. This is what the Michigan correspondent says:

"In this State where this tree is very common and grows to great perfection the lumbermen nearly all call it Norway pine. This is an unfortunate name, as it does not grow in Norway. It sometimes becomes a very tall, straight tree, two feet or more in diameter. The bark

is red and rather smooth, the leaves are about five inches long, of a dark green color and borne in bunches at the end of the branches. The color of the trunk and the long leaves make it a tree of peculiar appearance. It is not very common in cultivation, probably because the nurserymen cannot easily get seeds. Young trees taken from their native soil are very likely to die. In my opinion it is a more beautiful tree than the Scotch pine, and more beautiful than many others which are often used for ornamental purposes. Small specimens grow in the Arboretum."

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

A MURDEROUS PLANT—DARLINGTONIA CALIFORNICA.

BY J. G. LEMMON, TO THE CALIFORNIA ACADEMY OF SCIENCES.

(Concluded from page 278.)

THE WATERS OF DEATH.

So of the watery fluid found in the lower portion of the petioles at times. Only at a certain season—just at the opening of the months above, may this phenomena be detected. The main veins on the inside of the tubes may then be seen gemmed from top to bottom with beads of a water-like secretion, which finally becomes so abundant as to flow down and form the wells of death. When the trap is favorably placed, or the quantity of the insects is unusually large, so that the gourmand gets his stomach full, or when fed by hand to the top, slowly, with flesh food, the fluid is secreted as demanded by the necessities of the case, and soon fills the tube to overflowing. Late in the season the water is evaporated and only the skeletons, wings, legs, etc., of insects remain—the bones of the carnal feast. Again the arrangement and different altitudes of the leaves are not at once observed—and cannot be made out clearly from the usual crowded specimens supplied to the herbariums of the world. Only young, vigorous, solitary plants display the typical plan of growth—a plan conformed to the wants, or rather, the

wicked designs of the *Darlingtonia*; and here we are brought round to the solution of the question under particular description—

WHY THE TWISTING LEAVES?

First as to the facts. The leaves of mature rhizomes—the true *Darlingtonia* leaves—are each twisted one half way round whatever the length, whether one half inch, or over three feet. All the leaves on one plant turn one way, but exactly half (according to repeated counts by Mrs. Austin and myself,) have leaves turning one way and half the other. The four leaves of the season rise successively to different elevations, the last in time, to the highest place. Each turns half-round and holds out its flaunting lures into space in a direction radiating from the center or axis of the plant. The reason for this twisting of the petiole must be to further the design—the malicious animus of the whole plant's history, to favor the catching of insects coming from all quarters.

The less crafty-related *Sarracenia* and the infant *Darlingtonia* leaf depend on gravitation mainly, for their food, and their mouths bordered indeed with retrorse hairs open upward. The full-grown, full-armed *Darlingtonia*, with its added attractions of gay colors, fragrant odors and delicious sweets, best compasses the wholesale capture of insects necessary to satiate its rapacity by decoying them into a brilliantly lighted chamber, over the ceiling of which are spread a net-work of honeyed path-ways, bordered, how-

ever, and ultimately shut out by hedges of short stiff hairs that topple the victim from his footing. A high rim prevents return by the aperture. A long portion of the inner side of the tube, commencing just on a level with the edge of the orifice, is smooth as glass, so vainly the poor victim stretches his legs for rescuing aids to stay his descent. About half way down, long stiff declined hairs begin to be met with, which give away easily from above but close up behind, and with multiplied numbers, as the struggling victim nears the goal, pushes him down to the rising flood, and crowds him beneath the silent, fœtid decomposing waters of oblivion.

THE CLIMAX OF CUNNING.

Now why the peculiar characteristics of the *Darlingtonia*? Why would not less elaborate machinery answer as well? Let us see: a tube so capacious as to hold a half pint of insects, the usual meal it seems of the *Darlingtonia* must be very wide or very long. If wide, there would be great expenditure of the saccharine secretion, since it must surround the mouth and smear all the approaches—an expenditure not to be incurred by our economical plant. If long and prostrate, it would be interfered with by other plants, also would be in danger of visitation and robbery by insect-loving animals. If upright and with mouth upturned, it would be above the usual range of insects, while its digesting fluid would be weakened by the reception of rain and dew; but, most of all, other plants are created and set to work on this principle: The wonderful climate and soil of California must be expected to produce a finished insectivorous plant, with all possible improvements; hence, the matchless *Darlingtonia*, with its high-reared, inflated heads, downward opening mouth, sugar-plum, winding roads to lead foot travelers up; ingeniously, brilliant and honey-coated decoys to attract flyers; and the enormous mustaches obviously turned outward by twisted petioles to catch the eye of distant voyagers in every direction; no feature of all the host is either accidental, useless or uninteresting.

[The above fascinating and accurate description of this famous plant was read before the California Academy of Sciences, February 18th, 1878. We are glad to know that Prof. Lemmon is now at work on a course of three lectures on the conifers of California, and we are confident that they will be of exceptional interest and excellence; first, because of his full acquaintance with his subjects in their habitats; and, second,

from his brilliant and vavicious style of expressing his facts and ideas. We hope these lectures will be widely heard, not only on this coast, but beyond the mountains.—*P. Rural Press.*]

THE "CURL" OF THE PEACH LEAF, ASCOMYCES DEFORMANS.

BY W. H. SEAMAN, WASHINGTON, D. C.

There are few cultivators of the Peach who have not been annoyed by the disease known in this country as the *curl* and in Europe as the *blister*. About the time the leaves are fully developed in Spring they begin to twist and crimp and shrivel, either in whole or in part, and when the disease is very bad an occasional tree will lose almost the entire foliage—a second crop of leaves usually quickly replacing those which are destroyed.

If an examination be made when the distortions begin to appear, they will often be found infested with aphides, and a certain proportion of curl in the leaf is undoubtedly caused by the attacks of these insects. The injury they accomplish is usually very early in the season, and they generally disappear entirely before the disease has reached its maximum. The leaves they attack often assume a reddish hue, and seem favorite places for the fungus named at the head of this article,—which is the principal cause of curl,—to commence its growth. It is often difficult to say precisely how much is due to the insect and how much to the fungus on the leaves which have suffered from both, but as the season advances the fungus assumes entire possession of the field. Its spores lodge on the surface of the leaf and immediately produce small short-jointed and irregularly shaped threads or mycelium that penetrate the substance of the leaf, between the cells of the parenchyma, which is also stimulated to abnormal growth, causing the thickening wrinkling and ultimate blanching of the leaf, which are the symptoms of the disease in question. For some time nothing can be found on the surface of the leaves, but at length a whitish filmy mould may be seen in places by the naked eye, which is a mat of fruit-bearing branches of the mycelium in question, and shortly after this is produced the disease usually disappears.

The fruit is composed of small sacs terminating the short erect branches that rise from the leaf; generally they contain eight transparent spores, and the growth of the parasite is promoted by warm moist weather.

There are several species of this genus of fungi, all of which are parasitic on living plants. *Ascomyces Juglandis* lives on Walnuts, *A. bul-latus* attacks Pear leaves. The latter was described and figured in Vol. IX, *Journal Horticultural Society*, of London.

Peach curl seems to have been first alluded to by Berkeley in his *Introduction to Cryptogamic Botany*, and named and figured by him in his *Outlines of British Fungology*. It is also described and figured by W. G. Smith in the *Gardener's Chronicle* of July, 1875; the figure must, however, be considered rather as diagrammatic as regards our American form. Smee, in *My Garden*, copies Berkeley's figures, but says he has not been able to see the fungus, and believes "the aphid is constantly present, and the fungus is but rarely so. However it may be in England, in this country the reverse is true, although it is often necessary to use chemical re-agents to detect the creeping mycelium in sections of the leaf before the fruiting branches appear.

Except when trees are old or feeble, we have rarely seen sufficient injury by Peach curl to render serious efforts for its destruction advisable. Undoubtedly, if a remedy were indispensable, it might be found in some of the preparations of sulphur applied by such methods as are used in extirpating mildew from foreign Grape vines.

ADVENTITIOUS BUDS IN THE BEECH TREE.

BY B. F. L., PHILADELPHIA.

Last Spring, whilst wandering through a forest, I came across a Beech tree a foot or eighteen inches in diameter, which was ornamented as usual with the alphabet in disorder. The letters in this case had been cut unusually deep, both the outer and inner bark having been cut away to the wood beneath. Again, the letters were very large, so that strips of the bark an inch or two in width had been removed. When I saw the tree, a year or two had probably elapsed since the artist had completed his work, nature during the intermediate season having tried its hand at improving the angular work of the knife. The outer bark, last Spring, was precisely as when first cut, whilst the inner bark had rounded out into a moulding, to use a term familiar to the builder, all over the surface of which buds had thickly started, in some places looking like a mass of thorns, in others the growth had been continued into short branches

which had finally died. This is a record of probably a not unusual circumstance, but I give it, as it bears some relation to the following, which I have just noticed during the past week at Atlantic City, N. J.:

The prevailing trees at this resort are Willows and Poplars, both members of the order Salicaceæ, which trees have been adopted for street planting, after repeated trials of other kinds, as those best suited to the soil, &c. There appears also to be a native Willow, in addition to the one introduced, which in habit is shrubby, and does not grow to any considerable height. This Willow is at this season punctured by an insect, the incision doubtless reaching the inner bark, and eggs therein deposited, the result of which is the growth of a dense mass of leaves or diminutive branches from the wound. These leaves are all twisted and curled up, and the petioles of the leaves or the stems, whichever it may be, grow more or less together, so that they form a mass of green wood in which the caterpillar, when it emerges from the egg, forms its very irregular nest. Am I not right, Mr. Editor, in supposing the cause and result similar in the two cases?

[Not quite. The subject of form as produced by the gall of an insect, and the result of the insect's action in monstrous development, is scarcely to be compared to the production of buds and branches on parts of the stem where none previously existed.

Critically, it was not the "inner bark" which our correspondent saw rounded out. New wood had been made by germination from last year's cells, and these new cells forming a new coat of wood, had made its own coat of bark. In such cases the new wood cells while making the new bark will often make at the same time buds capable of developing into branches, a fact well-known to horticulturists engaged in propagating from root cuttings, as also to foresters, who often see in the Cottonwood and Horse Chestnut especially, a "forest of shoots" spring from between the old wood and bark of a recently felled tree stump.—ED. G. M.]

ASCLEPIAS CORNUTI.

BY MISS M.

I have been watching with interest for some days the visits of flies to the *Asclepias Cornuti*, Decaisne, common Milkweed or Silkweed, the house fly, a large green one, and another having the appearance of a flying ant. They light on the centre of the flowers, putting their probosces in

every hood behind the horn. While doing so, if not careful, the hind leg will get caught in the slit between the hoods, and in the effort to extricate itself, the limb will often leave the leg behind.

I was fortunate at last to see a fly, one of the former (the two latter do not seem apparently to have any such difficulty, but light and fly away at pleasure,) light and carry off a pair of pollen masses attached to its leg. It visited several flowers before I was successful in capturing it. The flitting from flower to flower, with the pollen, proves to my mind the manner in which the plant is fertilized: the slit is an ingenious trap. The large green flies were more numerous than the others.

I see that Dr. G. F. Walters, of Boston, has found in the juice of the Milkweed a remedy for

suppurating wounds. The time of healing varied from twenty-four to thirty-six hours, but in each instance new skin formed completely across. The Doctor states that the only essential point is to dry the wounded surface gently and thoroughly with blotting-paper before applying the Milkweed juice. After the juice is applied, and while the healing is in progress, a piece of blotting-paper is used to cover the surface.

[The catching of flies, as referred to by our correspondent, is alluded to by Nuttall in one of his works, written over fifty years ago, but seems to have been forgotten. For what purpose such traps are made is an interesting study. Many Asclepiadaceous plants have the same habit. *Physianthus albens* is a striking example, quite large moths often being found hanging from the flowers as caught.—ED. G. M.]

LITERATURE, TRAVELS ^Q/₂ PERSONAL NOTES.

EDITORIAL NOTES.

HORTICULTURE IN MARYLAND, (concluded from page 285).—John Feast, the veteran florist,



largest commercial establishment, but also, it is believed, the most extensive miscellaneous collection of plants in the country, though of late years this has much diminished by his reduction of the area of his houses by sales of ground becoming too valuable to be retained for its former purposes.

He was not only an originator, as we have seen, but a constant importer of new and valuable trees; and it is to his credit that his love for them was not limited by his desire to profit from their sale. Although ambitious to make his collection as complete as possible, his novelties as soon as propagated were willingly divided or exchanged, and we believe his enthusiasm, which continues unquenched, was far beyond the influence of mere money-making.

John Feast is by birth English, having been born in Yorkshire. At the age of thirteen, showing a fondness for flowers, he was sent to Lord Yarborough's, then one of the finest places in England, and at nineteen was given the charge of the Botanic Garden then owned by Miss Charlotte Pelham and devoted to the products of Florida. In 1823 he emigrated to the United States, joining his brother Samuel in business, the connection continuing until 1830, when he

who is now the oldest as well as still one of the most enthusiastic lovers of plants in this community. Mr. Feast at one time had not only the

removed to 295 Lexington street, his present establishment. He has been identified with all the movements in Baltimore to promote Horticulture, and numerous public institutions have had the benefit of his helping hand. He was one of the founders of the first Maryland Horticultural Society 1820; assisted in reviving it in 1851, and was active in the organization of the present one in 1874. He took great interest in the early success of the Maryland Institute, and for many years was in its Board of Managers, a number of its exhibitions having been arranged by him with his characteristic ability to produce pronounced effects from the materials at command.

He was charged with a similar work as superintendent in the decoration arrangement of the household department of three successive agricultural societies in this State.

Mr. Feast has from time to time contributed to various publications, or read before scientific societies, papers on botanical or horticultural topics. For a number of years he contributed to the *American Farmer*, a calendar of monthly operations in the flower garden and green house. In 1868 Mr. Feast received carte blanche from Gen. Capron, then United States Commissioner of Agriculture, to purchase in Europe trees, plants, cereals, &c., that would likely be acquisitions in this country. In the performance of the duty entrusted to him he visited England, Belgium, Prussia, Germany and France, and brought home a very valuable collection for the Government, as well as many rare and curious additions to his own stock.

In 1869, having been elected to represent his ward, the 13th, in the First Branch of the City Council of Baltimore, he was made Chairman of the Committee on Parks, in which capacity his technical knowledge and long experience were duly availed of.

HORTICULTURE IN BALTIMORE.—Captain Chas. H. Snow writes: "In an article in the September number of the GARDENER'S MONTHLY I am credited with an article on Horticulture in Maryland. The article in the *American Farmer* was from the pen of the editor, Mr. Wm. B. Sands, the very efficient Secretary of the Horticultural Society of Maryland. I read an article before the Society on the advance of floriculture in the last fifty years, and Mr. Sand's article was written to show what part Baltimore floriculturists had taken in it.

"I see you have altered my spelling of 'Epiden-

dron.' I know that it is spelt Epidendrum, and that spelling has become choice. It comes from the Greek, epi, upon and dendron a tree, and takes the same termination as Philodendron, Leucadendron and Rhododendron. I write this to show you that I know what I was about when I spelled it 'Epidendron.' It is no use to let a palpable error go on forever."

[Classically, our correspondent is right; but botanical authors seem justified under certain botanical canons in using Epidendrum.—ED.G.M.]

FERNS IN THEIR HOMES AND OURS.—This is the title of a work announced by Mr. John Robinson, Professor of Botany to the Massachusetts Horticultural Society. The Ferns are to be printed in colors, and the price to be \$1.50.

CLIFTON PARK GARDENS, BALTIMORE.—Under a lease with the trustees of John Hopkin's University, the fruit and green-houses of Clifton Park Gardens are to be worked by the gardener, Mr. Fowler, for his own use and benefit. Mr. Fowler is one of the most intelligent gardeners in America, and his numerous friends will wish him every success in his new enterprise.

DR. H. A. SWASEY.—No doubt among the list of five or six thousand deaths from yellow fever, will be found the names of many of our horticultural friends. We have watched the lists so far as their fragmentary character will allow, but so far have seen only Dr. Swasey's name among others. His death is a very severe loss to American horticulture, which he has served so long by his able writings.

JOHN NICHOLAS HAAGE.—This excellent botanist and founder of the celebrated seed firm of Haage & Schmidt, of Erfurt, recently made a botanical excursion to Switzerland, where he fell from the rocks at Murren and was dashed to pieces. Mr. Haage, when a young man, was a student in the Royal Botanic Garden, Regent's Park, at London, when the writer of this first made his acquaintance, and admired him for his zealous enthusiasm in the cause of botany and horticulture; and there is perhaps no better evidence of his strength of character than in the building up of the well-known and influential firm of which he was the senior partner.

PROFESSOR ASA GRAY.—C. W. Quin, in the *London Garden*, says: "We are pleased to learn that at the last meeting of the French Academy of Science, held on July 29th, Prof. Asa Gray, the well-known American botanist,

was elected corresponding member of the botanical section of that learned body by thirty-two votes out of forty. Mr. Charles Darwin, who was the other candidate, only polled five votes. Although, of course, we should have been glad if the honor had fallen on our own countryman, we most cordially congratulate Professor Asa Gray on the well-earned distinction conferred on him, a sentiment in which we are perfectly sure that his unsuccessful rival will join most heartily. It will be seen by this that if one wants to consider the feelings of all, and particularly those of M. Decaisne and the gen-

tlemen who compose the French Academy of Science, it is not well to do too much. Professor Gray, however, is also an indefatigable worker in the cause of science."

[To the above we may add that here in America, where Mr. Darwin and his labors are highly esteemed even by those who may not always agree with his conclusion, it would have been a source of gratification had Mr. Darwin been elected, and we are sure this sentiment would have been heartily shared in by Professor Asa Gray, worthy as he is himself of any honor the French Academy can bestow.—ED. G. M.]

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

MASSACHUSETTS HORTICULTURAL SOCIETY.

—*Eightieth year of Col. Marshall P. Wilder.*—Col. Wilder's horticultural and agricultural friends thought the eightieth birthday of this distinguished patron of the art of cultivation, a good occasion to celebrate, and met accordingly in great numbers at The Parlor House, Boston, on the 21st of September, to do honor to it. It was a grand success. Col. Wilder in response to remarks by Alderman Chas. Breck, spoke as follows:

"Mr. President: I thank you for your kind expressions of respect, and you, my dear, dear friends, for the very cordial reception you have given me. Nothing could be more grateful to my feelings than these warm demonstrations of friendship and regard, coming, as they do from those who have known me for many years, and are conversant with my many frailties and faults. Yes, the wheels of time move on and tell the story of our by-gone-days; and if I live to see the opening of another Sabbath morn I shall have passed the bounds of fourscore years. Most devoutly would I render thanks to the Giver of all good that he has prolonged my life, and that I am able to be here with you on this joyous occasion—here in the presence of my beloved pastor, who for thirty years has been my spiritual adviser—here with so many kind friends and co-laborers, with whom I have taken sweet counsel these many years—here to receive your friendly

salutations and, perhaps for the last time, to enjoy the sweet melody of your voices and breathe in the still sweeter consolation which arises like incense from off the altar of sympathizing souls. When we reflect upon our past labors, our thoughts naturally revert to the Massachusetts Horticultural Society, whose fiftieth annual exhibition has just closed, and for which you, Mr. President, and your good father have done so much. Well do I remember its first exhibition in the old Exchange Coffee House in this city. Well do I remember the scene, with its two small side tables and one at the head of the hall. Well do I recollect the contribution of fruits when Robert Manning, the great pomologist of America, contributed only two baskets of fruit, and the subsequent growth of his enterprise, when he donated many hundred varieties, and afterwards had in the Pomological Garden at Salem 2000 varieties of fruit trees. Thank God, his son, bearing his own name, is with us to-day. Well do I remember the dinner at which sixty gentlemen participated, and the speeches which succeeded it. The scene is before me now. There sat at the head of the table the eloquent Dearborn; there on his right and left sat His Honor, Lieutenant-Governor Thos. L. Winthrop (father of our beloved Hon. Robert C. Winthrop), and His Honor the then Mayor of the city, Harrison Gray Otis, and the accomplished statesman and orator, Daniel Webster of immortal fame. [Applause.] There, too, were Hon. John C. Gray, vice-president, Dr. Jacob Bigelow, corresponding secretary of

the society, and John B. Russell, all of whom still survive; and here to-day, much to our joy, are the brothers Hovey, who were present on that occasion. Well do I remember the toast of General Dearborn—"Intelligence and industry, the only true promoters of the public good"—a sentiment which deserves to be written in letters of living gold. I thank you, Mr. President, for your kind allusion to me as one who has done something to promote the interests and welfare of my fellow-men. My friends, I have lived to see great progress and improvement in the agriculture and horticulture of our country, much of which may be primarily traced to the enterprise and labors of Massachusetts men. Suffice it to say, that, from the day when Governor Endicott planted his Pear tree at Salem, which still lives; from the day that Perigrine White planted his Apple tree at Marshfield, Mass.; from the day when our society was formed it has stood prominently before the world as a leader and patron of agricultural and horticultural science. How marvelous the progress in our own day! How grand the march of horticulture since the establishment of our own society! It is scarcely fifty years since the Massachusetts Horticultural Society was formed. Then there were but few horticultural and agricultural societies in our land; now they are counted by thousands, and are scattered over the continent, all working harmoniously for the promotion of these arts. Then there was scarcely a nursery of any note west, and only a few east of the Hudson river; now they are planted from one shore of our country to the other, and among them many of the largest in the world. Then Mr. Hovey had not sowed the seed of his Strawberry and other fruits, which have since immortalized his name, or commenced laying out his extensive grounds and building his houses in Cambridge. Then I had not planted a seed of the Camellia, the Azalea, Pear or Grape, nor even attempted the hybridization of a plant; now our American fruits and plants enrich the gardens and adorn the catalogues of foreign lands. Then we had no such splendid villas as those of Hunnewell, Payson, Gray and others, with their broad lawns, extensive glass structures and magnificent plants, which are such an honor to our land. Then we had many old and fine homes and gardens, such as Governor Gore's, Mr. Lyman's, Mr. Preble's, Mr. Cushings's, the Perkinses and others; but very little in the way of landscape gardening or in new or rare plants or fruits. Then our exhi-

bitions were confined to a few days of the year, and were for many years held in small rooms; now many of our exhibitions are the best given in any State in the Union. Then we had no building of our own; now we possess the most costly and magnificent temple of horticulture that the world can boast. Then the American Pomological Society, whose president, by the mercy of God, in his 28th year of service now stands before you, had never been dreamed of—a society that emanated primarily from the influence of the Massachusetts Horticultural Society—a society that embraces not only our national domain, but whose jurisdiction extends over our continent—whose catalogue prescribes the appropriate fruit for fifty States, territories, and districts. and at whose quarter-centennial in this city, the far-off State of Nebraska, with her Governor at her head, carried off triumphantly the Wilder medal for the best collection of fruits. Then there were few exports of fruits; now we send 400,000 barrels of apples in good years to foreign lands. Then the grape was scarcely cultivated; now, in addition to all that are used for the table, we make 15,000,000 gallons of wine, and wine, too, that took the first prize at the World's Exhibition at Vienna, in 1873. Then the statistics of our fruit crop were not thought worthy of record; now it amounts to \$140,000,000, or nearly the average annual value of our wheat crop. But I must bring these remarks to a close. I thank you for the kind references to me as a pioneer in rural affairs. You do me no more than justice, for I cannot, as I have told you before, remember the time when I was not fond of the cultivation of the soil. But, gentlemen, my labors are mostly over. Soon I shall be resting in the bosom of my mother earth; but if I can believe I have done anything to advance the great interests of our land, and which shall contribute to the happiness of my fellow men, I shall, so far as this world is concerned, die content, feeling that I have not lived in vain.

Mr. Wilder resumed his seat amid a storm of applause.

THE NEW JERSEY STATE HORTICULTURAL SOCIETY,—intend holding an Exhibition in connection with the Burlington Co. Agricultural Society at Mt. Holly, on the 8th, 9th and 10th of October. The schedule of premiums is quite large, and those desiring information can obtain it from Mr. Jno. T. Lovett, Red Bank, Monmouth Co., N. J., who has sent us a schedule.

THE
GARDENER'S MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

Vol. XX.

NOVEMBER, 1878.

Number 239.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

It is surprising how many elements of beauty we have around us of which we neglect to make any use. Especially is this true of our beautiful Fall flowers and of our remarkably fine Autumn foliage. Of the latter we have often spoken, and recommended that its peculiar features be studied with the view of using it in the artistic decorations of our gardens. Of the former we speak now through having seen in a country "yard" a very pretty combination of very common Fall flowers. The common Michaelmas Daisy—one of the loveliest of native Asters—was growing in the midst of a little piece of grass near the cottage door, making a mass of bright purple and gold, probably three feet over and three or four feet high. Around this the common Golden Rod, *Solidago Canadensis*, was placed, and then another circle of the corymbose Aster—*Aster corymbosus*—with "white-brown" flowers. The writer has never seen any combination in the stylish flower gardening, copied from foreign flower beds, that equaled this single mass of flowers gathered together from the native woods. In the plannings for next season's work, which is very likely to be among the "work for November," it may

be well to think of these things. And then another matter of interest in regard to collecting hardy herbaceous plants is, that there are a large number of rare native plants not yet in cultivation, which many an owner of a first-class collection would give a good deal to possess. A collection from one's own neighborhood would therefore often be really one of the most valuable one could have, and be the foundation of a series of exchanges with others, which would soon swell a little collection to one of the best.

In the culture of herbaceous plants it is well to remember that generally a part dies every year. They seldom come up in exactly the same place every year, but a bud or runner pushes out and the old part dies. Though all herbaceous plants move in some such manner, they do not all go directly under ground, but make bunchy stocks just above ground. In their native places of growth they manage to get covered with decaying leaves from the woods or shifting sands on the plains, but in cultivation nothing of this kind can be naturally accomplished, and unless art comes to aid the plants they soon die away. An *Auricula*, a *Primrose*, or a *Carnation* is a good illustration of this. In the two former a new crown is formed on the top of the old one, and as the lower parts in time die away, unless

new earth is drawn up, success with such flowers will not be great. The best plan is to take up and replant every few years, or cover the running parts above ground with earth, so that they may have a chance to get new roots from the advancing stocks. This is noticed here at this season to show that earth is the natural covering for herbaceous plants, and therefore one of the surest ways of preserving them safe through Winter is to draw earth over them. In the Spring they can be unearthed and then divided and set a trifle deeper than before, which is all they want. We are often asked how to preserve Carnations, Chrysanthemums, Pansies, Phloxes, Hollyhocks and so forth, safe till Spring. The principles here laid down will explain the practice.

The planting of trees will still continue to engage our attention at every favorable opportunity. Many prefer at this season to remove trees in the Winter by the "frozen ball" system. There is nothing gained by this practice. To those unacquainted with this mode of planting we may as well describe it. Just before frost is expected, a trench is dug around a tree a few feet from its base, leaving the tree, so that with a rope at the top, it can be easily drawn over. A hole is then dug for it in the situation desired. When the "ball" has become frozen through around the tree, it is removed to the prepared hole; and when a thaw comes the soil is filled in around it. We have said there is nothing gained by it, and there are many disadvantages. If the tree has been removed a "time or two" before, as most nursery trees have, it will have an abundance of fibres near the stem, and can be successfully removed without much regard to the "ball of earth," either in Fall or Spring. If it has never been removed before, that is a tree growing naturally, it will have no fibres at its base, and so no "ball of earth" can preserve them; so that a tree which can be moved successfully on this freezing system, can be as successfully done without it. The disadvantages of it are that it exposes the injured roots for a long time to the injurious action of the frost and the elements, besides the frequency of the operation being improperly done by several attempts being made at its completion. We have given the system a fair trial, and have done with it. The main object should be to preserve all the roots possible with the tree, keep them moist and preserve from injury, then go ahead and don't wait for frost.

COMMUNICATIONS.

"HOLYWOOD," AT LONG BRANCH, N. J.

BY PETER HENDERSON.

This is the residence of John Hoey, Esq.; nearly 200 acres is embraced in the domain, which is located about half a mile from the beach, on a gently rising grade, having a frontage of some 4000 feet. The mansion is located some 1200 feet from the entrance, and from that distance looks as if framed in the foliage of a clump of trees, which, however, is some distance behind it. On both sides of the main drive is a broad expanse of lawn, unbroken by tree or flower-bed, and of a verdure unexcelled; on each side of the same drive is a mammoth ribbon line bed, running a length of 800 feet—the effect of these beds, when I saw them in the light of an August afternoon, in contrast with the velvet-like lawn, is something never to be forgotten, and it is doubtful if in all the experienced art of Europe they have ever been surpassed. The materials to form the combination of color was nothing new, but it was the harmonious blending and the healthy vigor and keeping of the plants that rendered the effect of the whole so fine. The first line was composed of *Alternanthera latifolia*, then followed "Mountain of Snow" *Geranium*, *Achyranthus Lindeni*, *Coleus "Golden Model"*, *Achyranthus Gilsonii*, *Coleus Verschafelti*, *Stevia serrata variegata* (a plant new for this purpose), *Genl. Grant Geranium*, *Centaurea gymnocarpa*, *Coleus Verschafelti*, *Coleus "Negro"*, *Pyrethrum "Golden Feather"*, and *Alternanthera magnifica*. These formed beds about twelve feet in width rounded from each side so that the red line of *Geraniums* formed the centre. On the plateau immediately in front of the residence were some very fine beds massed in colored foliage, and a large triangular bed of succulents, embracing a most interesting collection of *Agaves*, containing nearly every known species in cultivation here. At this point also was a crescent-shaped bed, the ground work of *Alternanthera*, bordered with *Golden Feather*, in which was written in very fine lettering,—the letters formed of *Echeveria secunda glauca*,—the words "The Charm of Life is Love," and "Nature here shows Art." The number of plants necessary to make this bed was 50,000. The whole number of plants used for bedding purposes, Mr. James Mackay, the able gardener in charge, estimates at not less

than a million. To grow this immense number of plants at least 40,000 square feet of glass or nearly an acre of greenhouses are used; these are put up in the most substantial manner, and in many of them some exquisitely grown specimens of plants are now to be seen, in Crotons, Dracenas, Marantas and Ferns especially.

A novel feature, as well as a very ornamental and useful one, of Mr. Hoey's greenhouses is the French lattice shading formed by thin strips of wood one inch in width with half-inch space between; these are connected by rings and can be rolled up as readily as an ordinary window shade. These shades must soon come into general use, as in a climate like ours they are invaluable, being not only a shading against our fierce Summer suns, but bid defiance to hail storms and materially protect in Winter against cold; they are yet expensive, however, costing nearly twelve cents per square foot, equal to the cost of the whole wood work of a greenhouse. Another feature observed at this most interesting place was a plan that Mr. Hoey inaugurated to heat the water used in watering. The pipes supplying the water for each house are run along on the heating pipes, so that for the purpose of syringing in Winter, tepid water can always be obtained. Gas jets, with reflectors, are arranged in the principal conservatories, so that in the evening when desired the plants can be lighted up.

No wonder that the name of John Hoey is a household word at Long Branch. Its thousands of pedestrian visitors are welcome at all times to enjoy the glories of this modern Eden, so lavishly adorned by its munificent owner. At 4, P. M., the gates are thrown open for vehicles, and it is no unusual thing to see three hundred carriages at one time driving through the grounds. The classes that visit Long Branch are, many of them, people of means and refinement, and this liberal example of Mr. Hoey's is already doing more to educate our people in matters of this kind than can well be estimated, so that all interested in the progress of horticulture, whether professional or otherwise, owe him a debt of gratitude that ere long they will not be slow to acknowledge.

LILIUM AURATUM.

BY DAVID M. BALCH, SALEM, MASS.

When this capricious plant finds the surroundings perfectly congenial to its nature, it is capable of immense development, and on rare occa-

sions yields results at which we gaze with astonishment. A specimen worth traveling miles to see has this season graced one of our city gardens. Mr. T. Putnam Symonds, of Salem, Mass., planted in 1874, near the south-east side of his residence, No. 65 North Street, four bulbs of the auratum Lily; they were imported commercial bulbs of the first-class, and were set in a row about two feet apart, in soil cool, moist and partially shaded, and prepared with some care for their reception. These bulbs have gone on increasing in size and vigor year by year, and yield in their season a charming picture of floral beauty.

Bulb No. 3 has given this season, 1878, five main stalks from seven to eight feet in height, bearing respectively, ten, eleven, eleven, thirteen and fourteen flowers, and six minor stalks bearing eight flowers, sixty-seven in all; the flowers remarkably large and fine, and the whole plant a model of health and vigor. But the bulb nearest the street, marked, I believe, No. 1, has far surpassed this; last season, 1877, it yielded three stalks with seventeen, seven and one flowers, twenty-five in all. It is now, August 20th, 1878, carrying the immense number of 173 flowers, thus disposed: there are two main stalks nine and eight and a half feet high, bearing 140 and twenty flowers and buds, and four minor stalks from four to six feet high with thirteen flowers, 173 in all. The principal stalk is about three inches in circumference at the base, but quickly becomes fasciate, flattening to three inches in breadth and about one-eighth of an inch in thickness at the apex, where it is cleft; the upper two feet is crowded with flower buds, interspersed with leaves, 140 in number by careful count. About ten have proved abortive, but the stalk produced some 130 flowers. This was cut and exhibited August 24th, at the rooms of the Massachusetts Horticultural Society, in Boston, where it excited much surprise and admiration, and gained for Mr. Symonds the merited reward of the Society's silver medal.

At the head of this article I have called this plant capricious, and I think their experience in its culture will incline many to agree with me. Often, in spite of all our care, its bulbs, retrograding year by year, end in nothingness, and we cannot imagine why. Quite as often our success is moderate; we esteem stalks with ten or fifteen flowers excellent, and, in the present state of our knowledge of the plant's habit and requirements, so they are.

Mr. Symonds' bulbs get no special treatment, a top-dressing of old hot-bed manure, mixed with a little lime, in the Autumn, being all they demand. The fact is they like their surroundings. A light, rich soil, seldom too wet or too dry, rarely superheated, and partially shaded by neighboring trees and vines, has kept them in health and excited them to yield results which, although rivalled by bulbs specially cultivated in England, has never, to my knowledge, been equaled by bulbs growing naturally in the open air.

NEW DAHLIAS.

BY W. S. HIBBERD, RICHMOND, IND.

Among all cultivated flowers, a constant change and improvement is being wrought through the patient and careful labor of the hybridizer, often almost completely revolutionizing in a few seasons our lists of varieties of favorite flowers. And while much that is offered among novelties is inferior and not up to the highest standard even of older sorts, still an examination will show that a handsome percentage of our best flowers of all kinds have been introduced in the last few years. Nowhere is this more noticeable than in Dahlias; every year we get new sorts, embracing shades, colors and forms before scarce or unknown, until now, perhaps, no other class comprises so wide a range of colors, if we include the fancy, or striped and tipped flowers. As we have as yet no acknowledged floral tribunal before which American novelties can be brought to have their merits criticised, we have to rely, in a great measure, upon the English raisers for our new stock, their Royal Horticultural Society serving as a test to most new English plants, and in the main, its decisions are apparently fair and unbiased. Thus while many fine seedling Dahlias are annually raised in this country, but a small per cent. probably of even the good ones find their way into commerce, owing to this lack of an accepted power to pronounce upon their merits, and we find the best known novelties in these popular flowers coming from across the water.

Having a good selection of the newer English sorts under my notice during this season, I give you below some of the results of my observations. The novelties referred to originated principally with Keynes and Turner, names so well-known through the new plants they have sent

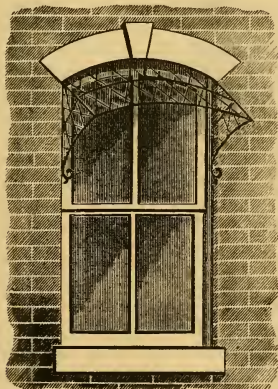
out in the past, as to leave little doubt to begin with in regard to the value of any they may think worthy of being sent out into the floral world under their names and recommendations. A prominent feature of these novelties is the symmetry of form and full bold centre of the flowers; this is especially noticeable in 'Turner's Chris. Ridley and Figaro, both of which were awarded first-class certificates by the Royal Horticultural Society. The flower first mentioned is of moderate size and a bright crimson color, the centre being always carefully filled with petals and showing perfect until the flower falls to pieces. Figaro is a larger flower of a really new color, the lower half of the petals being a pure yellow, which shines through the surface color of bright red with a beautiful effect. These two Dahlias produce a surprising quantity of bloom; a plant of Chris. Ridley which, when set out last Spring, had a tuber no larger than a walnut and with a single slender shoot, now has upwards of a hundred and fifty buds and open blooms upon it, while a plant of its companion has nearly if not quite as many. I have no doubt that if the buds had been judiciously thinned the flowers would have been of a larger size, but as all the blooms they have produced were perfect, a number of smaller ones were preferred to a few show flowers. Drake Lewis, another of Turner's, is of a color very acceptable to American amateurs—a rich, deep scarlet, very full and perfect. Keynes' late novelties remind us very forcibly of what floriculture lost in his death. His David Saunders is a magnificent Dahlia, often coming very large, and its rich purple-maroon color is much admired. Dauntless is also very good, orange-crimson in color and a large flower. The largest of all, however, is John Wm. Lord, another of Keynes' seedlings; the outline of the flower is perfect and compactly filled with deep petals, and the centre fully covered; in color it varies from orange-vermilion to bright crimson, with sometimes a buff shading on the surface. This also was awarded a certificate by the Royal Horticultural Society. Vivid is a large flower of a soft rich scarlet, and well worthy of its name. Minnie Bond, a creamy-white flower edged with purple, and Hon. Sidney Herbert, deep crimson, both of Keynes' raising, are very good indeed. The first blooms of Mrs. John Downie were also excellent, but those produced later have not been so perfect, the flowers failing to shape up nicely.

It seems to be a very prevalent error, both among amateurs and with many florists, that as Dahlias are rank growing plants they should be planted in a poor soil,—all the better if it is heavy and clayey; nothing could be further from the truth. They should be treated to a liberal mulch of manure in the Summer, in addition to having the soil good and rich when they are planted; for when care is shown them in this way the mulch not only further enriches the soil to supply the voracious appetite of the roots, but it also serves to retain moisture and keep the roots cool, resulting invariably in larger and more perfect blooms, such as those produced on a poor soil cannot be compared with. The flowers are much improved also by treating the plants to occasional but thorough soakings during hot, dry weather.

A WINDOW HOOD FOR ORNAMENTAL VINES.

BY MRS. L.

I enclose you a pencil sketch of a wire frame which we have found very effective in training the Virginia Creeper over our windows. It is an idea of my husband's, and has been so attrac-



tive here that I thought some of your readers might like to try the experiment. Our wire window hoods are now closely covered with foliage and long tendrils, drooping as low as the window sills, making a lovely shade in sunny weather and giving a softened light in the rooms. I will send you by mail some stereoscopic views

showing the effect on the house. I also send a photograph of our front porch, which I fancy you will enjoy, from the lovely effect of light and shade among the vines. Looking directly through the house you have a view of my pretty lake, seen through the drooping tendrils of vines trained on the back piazza. I know of no more exquisite decoration for a country home than these graceful vines.

EDITORIAL NOTES.

THE KENTUCKY COFFEE TREE.—We find some strange statements sometimes about American trees and American gardening from American correspondents of European gardening papers. One of the latest of these is in a paper on the Kentucky Coffee Tree, by Mr. C. M. Hovey, of Boston, to the *Garden*. He says:

"Though growing over such a vast extent in our own country, from Canada to Tennessee, it is yet very rare to find it planted in the Atlantic States; and it is doubtful if there are trees of any size, except in some of the old half-botanic gardens."

The writer of this knows of at least a hundred, many of huge size, spread among numerous gardens around Philadelphia, and this fact, Mr. H. could readily have ascertained before starting his error off on its mission to the Old World. Instead of their being scarce in culture in our country, there has been a steady demand for them for many years from some of our best nurseries, and they will be found in most catalogues of leading nurserymen. We know of one American nurseryman who must have had a stock last Summer when we saw them, of at least five thousand, from six to eight feet high, and we have no doubt if our foreign houses wanted to draw on American nurseries for a stock, ten or twenty thousand nursery-raised trees could be shipped on a three month's notice.

It is difficult to conceive what can be Mr. Hovey's object in sending such statements abroad. We will only say to our European friends that Americans do not neglect to cultivate their own beautiful trees; but fine specimens of perhaps all that have been long enough known to warrant it, may be found in many American gardens, though possibly that fact may not be recognized in Loudon's works, to which Mr. Hovey refers.

A PRETTY CITY GARDEN.—The city garden of Mr. and Mrs. Thomas Lord, of New York City, is thus spoken of in a daily paper:

"The extensive rear yard had been completely transformed into a perfect haven of delight; all that wealth could command and art contrive had been lavished on that open space of fifty by one hundred feet, and the whole most thoroughly concealed from the rude gaze of the neighbors by natural arbor vines of all kinds. The interior of this enchanting retreat was prolific of exotics, tropical fruit, plants and flowers in endless variety, and here and there were fountains of the richest perfumery in full spray; and flitting about the place were unnumbered feathered songsters from every clime, that vied with each other in sustaining an almost unbroken stream of melody. It was, indeed, a paradise of odors, music and flowers."

FRUITING OF THE AKEBIA.—Those who have not a plant of *Akebia quinata*, can have no idea what a handsome vine it is. It is so very hardy, has such beautiful foliage, is so free from diseases, grows so rapidly and yet is withal so slender and graceful that it is hard to find another climber to beat it. Besides it is the earliest to leaf and flower, and the flowers are so delightfully fragrant. This season it has added to its points of interest by producing its singular fruit in a few instances. Captain H. D. Landis, of Chestnut Hill, near Philadelphia, sends a very pretty specimen. But the most perfect we ever saw came from Mr. W. M. Canby, of Wilmington, Del. The female flower is composed of five carpels. They rarely perfect and produce seed, but when they do, only one or two matures. In Mr. Canby's specimen all had reached this stage, and as they opened on the upper side, formed one of the most beautiful rosettes imaginable, and offered a very beautiful model for a carver, or for architectural ornamentation. It is surprising, by the way, that those interested in the fine arts do not insist more on those they employ producing genuine representations from nature instead of the extravagance so often seen. What excuse can there be for making oak branches with acorns, twine spirally like climbing vines, as they do in the new Public Buildings of Philadelphia?

ROSES IN ROUND BASKETS.—It will be unfortunate if the admiration excited by the effect of the round baskets of Marechal Niel Roses, shown at the first Aquarium exhibition, leads to an at-

tempt being made by any society to adopt this shape of stand for all the classes of Rose show. Mr. Wills and ourselves thought, when looking at a box of Marechal Niels, shown by us at South Kensington, how well a round basket of this particular Rose would look, and having some hundreds of fine flowers, we carried out the idea somewhat carefully. The baskets used were two feet wide, ordinary nursery rounds, made without handles, and of rather well selected unpeeled rods, and these we found looked even better than baskets made of peeled rods. They were filled with cocoanut fiber raised to a point in the centre, and covered with moss. They held about thirty-six flowers each. Seen from all parts of the hall the effect of the yellow masses was striking. At the second show, where most of the baskets were of flowers of mixed colors, we personally thought the effect not nearly so remarkable, and we drew the conclusion that these baskets must be used only for the classes of "so many flowers of one sort." A basket of dark, with a ring of light colored Roses, as exhibited, was a failure in effect. This leads us to say that for these classes it will be feasible to use baskets, if provided by the society. Twenty-four or thirty-six blooms may be easily transferred to a basket from a box by exhibitors from a distance, while in the short time allowed for arrangement it would be almost impossible to transfer the blooms of, say, the seventy-two varieties, arranging them with the care exhibitors have hitherto exercised. From what we have heard expressed by amateurs and others, any attempt to enforce such an arrangement would, we fear, lead to a thin show, from the absence of some of our leading exhibitors. We throw out these remarks as a caution to societies not hastily, nor without full consideration, to adopt for all classes a novel plan well suited for one or more.—*Paul & Son, The "Old" Nurseries, Cheshunt, in Gardener's Chronicle.*

HOW TO PROPAGATE MISTLETOE.—The seeds being enveloped in a wet, slimy, or gummy-like substance, it dries and fixes them firmly in a short time, if put on when the bark and weather are both dry; whereas if the bark is wet, and rain falls shortly afterwards, they are liable to drop, or be washed off. In planting or rubbing on the seeds, take a berry between the finger and thumb, press it till the skin bursts and the seed is protruded. Apply to the part of the bark selected, throw away the skin, as it is of no furth-

er use, and might attract birds to the seed; then rub or press the seed firmly on with the point of the finger, and the sowing is completed; but a little dry, bird, or fowl's dung, a little old lime, mortar, or dry earth, may then be dusted on to conceal the seed from birds. This will afford sufficient protection if the seeds be put on so thickly that a large proportion can be spread, but when these are scarce, it is better to cover them with a gauze or fine netting held at least one inch off the seed, with pieces of furze or branch spray. Or, they may be surrounded at a distance of one or two inches by a few fine willows, wrought basket-like, and just sufficiently close to keep out birds' heads and beaks. It is not only unnecessary but improper to cut or open the bark, as the hardened wounded surfaces prevent, or at least impede the insertion of the young rootlets, which only take hold and insinuate themselves where the bark is tender, fresh, and devoid of outer dried or dead skin. Supposing the seeds to be rubbed on, either February or March, they will put out small knob-pointed radicles or rootlets in April or May, by which they become more firmly attached to the bark, but I have never seen them put forth leaves till the second summer; and this last season we had a considerable number of seedlings, none of which showed leaf till the third summer, and some look as if they would not do so till the next or fourth summer; but the trees on which their seeds were sown had to be all transplanted the second spring, which might have retarded their progress for a year.—*B. G., in Garden.*

WHITE LOBELIAS.—What "aristocrats" are these lowly-growing flowers, blossoming away all the Summer in pure white loveliness, and yet as proud of their bit of blue blood as is the veriest Bond Street dandy! An ordinary observer would scarcely imagine that the blood that circulates in the veins of these floral Albinos was as deeply infected with blue as are their cerulean brethren; but so it is. Singularly enough, the seed produced by the white kinds is also of a silvery whiteness, and thus differs materially from that of the blue forms, the seed of which is in color a dark red. Purchasers of white Lobelia seed can therefore easily ascertain by looking at it that they have seed of the right color, and mixing to avoid detection is an impossibility. Still, in spite of this fact, it will be found when the seedlings grow, that at least two-thirds of them come blue, the taint of blue blood

being so strong in the constitution of the white kinds. All the white forms have originated in in sports from *Speciosa*, and are in fact white reproductions of that variety; therefore, the tendency to revert to its original character is not remarkable. The only possible means of eradicating the blue tint is to select seed carefully every year from seedling plants of the purest white that are grown quite away from other colors, and thus by persistence a strain of pure white seedlings may eventually be ensured.—*Gardener's Magazine.*

DAFFODILS.

I wandered lonely as a cloud
That floats on high o'er vales and hills,
When all at once I saw a crowd,
A host of golden Daffodils;
Beside the lake, beneath the trees,
Fluttering and dancing in the breeze.

Continuous as the stars that shine
And twinkle on the milky-way,
They stretch'd in never-ending line
Along the margin of the bay:
Ten thousand saw I at a glance,
Tossing their heads in sprightly dance.
The waves beside them danced, but they
Outdid the sparkling waves in glee:—
A poet could not but be gay,
In such a jocund company:
I gazed—and gazed—but little thought
What wealth the show to me had brought.

For oft when on my couch I lie,
In vacant or in pensive mood,
They flash upon that inward eye
Which is the bliss of solitude,
And then my heart with pleasure fills,
And dances with the Daffodils. —WORDSWORTH

THE DAY LILY, (*Hemerocallis*).—This very pretty plant is not so generally used as it should be in shrubberies and flower borders, in semi-wild situations, and on the margins of ponds and lakes. For nearly two months past in my grounds it has been an object of general admiration. The first to flower was *H. Sieboldii*, with its fine orange colored flowers and graceful narrow foliage. After that came *H. fulva*, with bronze orange-red flowers shading off to crimson, the center being yellow. Next came *H. Thunbergi*, clear beautiful yellow. Then *H. Kwanso* flore pleno, with large double flowers of a fine rich apricot color, shading off to crimson, and along with it *H. disticha* flore pleno, with rich glowing orange finely formed double flowers, shading off to intense crimson. *H. fulva* and *Kwanso* flore pleno attain a height of four feet; *Thunbergi*, three feet; *disticha* flore pleno, a little over two feet; and *Sieboldii*, about two feet. Besides these I have other varieties of *Hemero-*

callis in my collection which have not yet bloomed. For furnishing vases, the cut spikes of flowers are most ornamental. As with ordinary Lilies all the undeveloped flower-buds expand in water.—*The Garden.*

A SENSE OF PROPRIETY.—Botanical Old Gent (in Brighton Gardens)—“Can you tell me my good man, if this plant belongs to the ‘Arbutus family?’” Gardener (curtly)—“No, sir, it doan’t. It b’longs to the Corporation.”

NEW OR RARE PLANTS.

EULALIA JAPONICA ZEBRINA.—This promises to be one of the most ornamental of grasses for isolated positions on lawns or for planting in the shrubbery border. In warm, deep, rich sandy soil it grows rapidly, and its leaves become effectively variegated. One of the best specimens we have yet seen is now growing vigorously in Messrs. Laing & Co.’s nursery at Forest Hill, where it has stood the past Winter without any protection whatever, and without sustaining the least injury.—*Garden.*

DOUBLE SCARLET GEUM.—This Geum, which has been in existence for some years, is not nearly so often met with in gardens as it should be. It is perfectly hardy, easily increased by division of the root, thrives well in any good garden mould, and from early in April until the end of September established plants of it yield abundance of bright orange-scarlet double blossoms, which in a cut state are quite equal, or even superior to those of the double scarlet Pelargonium. They last in good condition for some time after being cut; and when it is considered that a good supply of them can be had with little or no trouble for six months in the year, no garden, however small, should, one would think, be without this plant. Good established roots of it lifted late in the Autumn, and wintered in a house or pit, would, if kept close

to the glass, and given plenty of air and water, and a little heat after Christmas, no doubt produce good flowering plants for the cool conservatory full of flower in February, or even earlier. We lately saw large beds of it in flower in the Hale Farm Nurseries, where they form an attractive feature.—*Garden.*

ABIES HARRYANA.—New species; Abies Veitchi, Hort., Veitch, not of descriptions. This is the plant cultivated as A. Veitchi, and sent to me under that name by Messrs. Veitch. It differs in appearance from true Veitchi, and can be at once separated anatomically by the great development of the hypoderma, and by the position of the resin canals. If further investigation confirm the opinion that it is new, the name Harryana will be retained in compliment to Harry J. Veitch, Esq., the head of the firm of Veitch & Sons, in London. Leaves acute at the apex. Stomata on the under surface of the leaf only. Hypoderma forming a continuous or almost continuous layer under the epidermis of the upper side of the leaf. Resin canals touching the epidermis of the under side.—*Correspondent of Garden.*

SCRAPS AND QUERIES.

AUSTRIAN AND SCOTCH PINES.—F. M. Oberlin. A “popular” distinction between these two may be the very dark green of the former and the gray-green of the latter, which are besides shorter. Then the buds and branches are much stouter in the Austrian than in the Scotch Pine.

DAHLIAS.—From Leeds & Co., Richmond, Indiana, we have a box of flowers of very beautiful Pompone Dahlias. Some have despised the the Dahlia of late years, but they are among the largest of Fall flowers, and probably the most critical would admire such handsome forms as those sent by Messrs. Leeds.

GREEN HOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

The taste for “leaf plants” Palms, Ferns, and other plants with handsome foliage is good, but

it is a question whether the sacrificing of all our beautiful flowering plants for them is not an extreme of good taste, into which most of us are apt to run. Many of us look back on the old times

when Acacias, Chorozemas, Croweas, Heaths and Epacrisces, made our Winters gay, and when there was some real gardening skill required to grow them well, with great regret that times are changed, and that we see these pretty things no more; but the times will come again. We still have to have some flowers, though they are only Chinese Primroses, Carnations, Geraniums, Cyclamens, Bouvardias and other things which a child can grow, and which leaves the occupation of a first-class gardener, "gone." To grow these we need scarcely give any hints. A little sun, a little heat, a little air, a little care as regards insects, and these and most of the plants now grown in greenhouses will "grow" themselves.

There is really more skill required to manage a window than a greenhouse in these modern days. A few general hints for these may not be unacceptable. Window plants should not be kept very warm at this season. They should have all the sun and air, and as little of the artificial heat of the room as possible. These remarks apply especially to Mignonette, which is very impatient of in-door confinement. Succulents, such as Cacti, are excellent window plants in this respect, as the dry air does not affect them. To keep the air about the plants moist, is one of the secrets of window culture. Some who have very fine windows well stocked with fine plants, make glazed cases with folding doors of them, by which, when the room is highly heated and very dry, they can be enclosed in an atmosphere of their own. Where it is not convenient to have the window enclosed from the room by a folding door, much benefit has been found by using a simple curtain. This will prevent injury from the coal or illuminating gas, which is often as destructive as the dry atmosphere.

COMMUNICATIONS.

ORCHID CULTURE.

BY C. H. S., BALTIMORE, MD.

Maxillaria, *Lycaste*, *Trichopilia* and *Anguloa*.—I have put these four together, not because they are all botanically related, but that the same treatment will do for all, and they all make their flowers on short stems from the side of the bulbs. They all should be grown in pots, well drained, and a mixture of sphagnum moss, char-

coal and peat, suits them. In potting, the base of the bulbs should be raised well above the edge of the pot. This is particularly requisite with *Trichopilia*, whose flowers are semi-pendant. This also insures the roots from being rotted by too much water.

Maxillaria.—This was formerly quite a large genus, but *Lycaste*, *Promenaea*, *Paphinia*, *Bifrenaria*, and several others have been taken from it, and shorn it of some of its best species. It has, however, a few good species left. All the *Maxillaria* that I have seen, have bulbs about 1½ inches long, flattish, with one smooth leaf on the bulb.

M. grandiflora.—Grows about one foot high; the flowers are pure white in the sepals and petals; lip, purple and yellow.

M. venusta.—Has also a white flower; lip, white with lemon yellow and red, sometimes nearly all yellow. Both *M. grandiflora* and *M. venusta* bloom in early spring, and are desirable.

M. picta.—Has small flowers, yellowish white, spotted chocolate.

Lycaste.—These have bulbs from two to five inches high, dark green, and have several plicate leaves from a foot to eighteen inches high.

L. aromatica and *L. cruenta*.—Have yellow flowers about 1½ inches diameter. *L. cruenta* has some red spots on the lip. These bloom in the spring, and have the odor of cinnamon. They are very good bloomers, and keep in bloom about three weeks.

L. Deppei.—Not very handsome flowers, greenish yellow and brown; lip white, with crimson spots and yellow crest. Blooms in the spring.

L. lanipes.—A very free blooming species, with creamy white flowers; lip, white and fringed.

L. Skinneri.—This is the gem of the genus. The flowers vary very much in size and color. The bulbs are dark green, with two or three leaves from one to two feet long. Blooms mostly in mid-winter, but there are some varieties that bloom in Summer, when making their growth. I have a variety that blooms in Summer, and again in Winter from the matured growth. The flowers are from three to six inches diameter; the sepals and petals are from pure white to deep rose, and the lip, which is rather small, is white, blotched rose, pink or carmine. The blooms will continue good for over two months if kept dry. It will do well in a sitting room under a bell glass, as the gas will color the petals. No one can grow too many of this grand Orchid, and

any one can grow it. It wants plenty of water at the roots when growing, and some at all times, and should be kept near the light. A temperature of from 50° to 60° from October to April, and then as cool as possible during the summer months. I had six plants in bloom at one time last winter, and all different. There is a pure white variety, but it is scarce, native of Guatemala.

Trichopilia.—This is a small genus, but all the species are showy, and easy to cultivate. It does not require as much water as the *Maxillarias*. They all come from the highlands of Mexico and Central America. The flowers come up from the side of the bulbs, and are semi-pendulous, and on this account have to be potted high, so as to show the flowers to advantage.

T. coccinea.—Has flowers four inches diameter; sepals and petals creamy-white, with a reddish strip through the centre; lip shaped something like a gloxinia, is crimson, with a white margin. This is also called *T. marginata*. Flower in spring.

T. suavis.—Flower in winter. Sepals and petals white or rosy-white; lip white, spotted rose; has three flowers on a stem.

T. tortilis.—There are two varieties of this, one with short bulbs about an inch long and quite stout; the other has slender bulbs four or five inches long. The sepals and petals pale yellow, with reddish brown blotches, and they are twisted; lip white, spotted red. Mostly but one flower to a stem, but occasionally two.

T. albida, *syn. Pilumna fragrans*.—Has pure white flowers; lip white, with yellow blotch. Has three flowers on a stem, and is very fragrant. There are several other *Trichopiliæ*—*crispa*, *picta* and *Turnerii*, but I have not seen them in bloom.

Anguloa.—These are strong growing plants, and probably grow among rotten leaves and moss. The flowers of all the species come up from the sides of the bulbs, and look like tulips not quite open. They come from New Grenada, and require plenty of moisture when growing.

A. Clowesii.—Yellow sepals and petals; lip white.

A. Ruckerii.—Sepals and petals yellow with crimson spots; lip crimson.

A. uniflora.—Flowers white in all their parts.

ARTIFICIAL WOOD TILES.

BY MRS. C. S. JONES, MONROE, MO.

The most elegant embellishments we have used

for wooden receptacles of all descriptions are the rich artificial wood ornaments which are now made in such perfection, and which allow of so many and various finishings, such as bronze-gilt, enamel, &c.

For window-boxes, we have used the tiles with infinite satisfaction.



These inexpensive and richly carved (?) tiles are in imitation of various ancient models, and may be had of many sizes, and with perforations for the small brads, with which it is best to fasten them, after applying a coat of liquid glue to the under surface.

We arrange the tiles in various designs, using large and small ones, according to fancy. We then, either oil or varnish the surface, or in some cases, color with enamel-paints (colors mixed in Demmar varnish) and touch up with gold-bronzing powder, which gives the appearance of the Minton tiles.



Again we varnish and apply bronze powder, gold, crimson, green, &c.

To make an antique looking jardiniere or window-box, obtain lions; Grecian, Roman or Egyptian heads; griffins, scrolls, &c., and after applying them, varnish and bronze them.

We are earnest admirers and advocates of true art-work, and do not believe it right to recommend flimsy and fancy imitations of any kind;

but inasmuch as, at this time especially, thousands of people, are anxious to make home beautiful, if they may do so without great expense and with their own hands, we believe it better to



do so by such means as those here described, which may be made into true art-work, if carefully accomplished.

[With this we give the last of Mrs. Jones' very suggestive series, with a few more of Mr. Gleason's designs, and are sure all interested in tasteful home decoration will have perused the lady's letters with much profit.—Ed. G. M.]

HYACINTH CULTURE.

BY MR. M. W. CALDWELL, QUERYS TURN-OUT, MECKLENBURG, N. C.

The time has arrived for those who expect to have flowers from hardy bulbs in Spring to look around for their bulbs in time for Fall planting. And as I have already offered my experience in their culture, it is seasonable to send it. Southern readers know that old Mecklenburg County, in North Carolina, does not lie among the mountains, but that it is a fine cotton growing section, and that every vegetable known to the temperate zone can be raised with more or less success there, and a great variety of soil is to be found within its borders. The grounds we cultivate as our "flower garden" is of a gravelly or rocky nature, a yellowish pipe-clay lying underneath from six to fifteen inches deep, more or less. The land slopes to the south-east; when new or fertilized it produces good crops of any of the kinds cultivated in this section, including Cotton, Corn, Wheat, Oats, Rye, sweet and Irish Potatoes and all kinds of garden vegetables.

As regards Hyacinths, my experience in raising them teaches me first, to make the ground rich. I use a spading fork to dig the ground; I have not gone lower than twelve inches, because of the presence of pipe-clay. I throw up the earth in beds about four or five feet wide, elevated five or six inches, with three feet space between and of any length desired, and plant bulbs five or six inches deep. I plant from the middle of October till the last of November, any time that suits me. I never work ground wet. Plant the bulbs about

twelve inches apart, less will do, in the rows both ways; cover beds with any kind of good, well rotted manure one or two inches deep; clean out the walk between rows nicely, and the work is done. I have never put any kind of mulching on the beds that requires removing in Spring, and simply break the crust on the ground between the plants after they begin to come up, and then keep all weeds down. I do not think covering with straw, leaves or unrotted manure in Winter, to be taken off in Spring, is at all necessary in the South. I take up the bulb as soon as the leaves are yellow, last Spring this being on the 10th of May. I think any one who expects to have fine Hyacinth bulbs and blooms must put the ground in good condition and never leave the bulbs in the ground all Summer, nor plant in a grassy border to remain from year to year. I remove all the little bulbs from the old one and plant them the same as the large ones. In two years they will make good bulbs, a large one sometimes throws up from three to five flowering spikes. The red kinds seem to be inclined in this way more than other kinds, and the single more than the double. Tulips I treat the same as Hyacinths, except that I do not plant more than three or four inches deep. Any one purchasing bulbs expecting to realize a fine display without attention, only subjects him or herself to a cruel disappointment. I do not raise bulbs and seeds for sale, only for home enjoyment and to give away. I have about one bushel of Hyacinth bulbs. I have bought of Vick, H. A. Dreer, Moulson & Sons, and many others.

I think that all disappointment in realizing our expectations in bulb-culture in the Southern States rests upon the theory of poor culture, or rather the want of thorough preparation before planting. I can hardly perceive how any one could fail to receive value for proper attention. Among the wrong practices is leaving the bulbs in the ground from year to year. I take them up as soon as they are ripe and dry them a few days in the shade, then strip off their tops and lay them away in a cool, dry place till needed.

[Our readers will remember that these excellent notes from practical experience come from the correspondent who sent us the wonderfully fine flowers last Spring.—Ed. G. M.]

EDITORIAL NOTES.

THE VICTORIA LILY.—The *California Horticulturist* says: "We are soon to have the

pleasure of seeing this famous and interesting aquatic plant growing in a tank in one of the conservatories of the costly and grand Hopkins Mansion on "Nob Hill."

HELLEBORE POWDER.—Geo. S. Woodruff, Mt. Airy, Phila., writes: "Mr. Channing and others recommend Hellebore for destroying scale and mealy bug, but no one tells how much of the Hellebore is enough for a quart or gallon of soap, an item of some importance in view of the cost of the former. Will some one be good enough to give the information suggested."

HOW TO MAKE MOSS BASKETS.—Very beautiful baskets for holding flowers may be made of the longer and more feathery kinds of mosses. We have made them often; and never do flowers, whether wild or garden, look more lovely than when clustered within a verdent border of that most delicate and beautiful material, which by proper management may be made to preserve its freshness and brilliancy for many months. We will here give a recipe for their manufacture. A light frame of any shape you like should be made with wire and covered with common paste-board or calico, and the moss, which should first be well picked over and cleansed from any bits of dirt or dead leaves which may be hanging about it, gathered into little tufts, and sewed with a coarse needle and thread to the covering, so as to clothe it thickly with a close and compact coating, taking care that the points of the moss are all outwards. A long handle made in the same manner should be attached to the basket, and a tin, or other vessel, filled with either wet sand or water, placed within to hold the flowers. By dipping the whole fabric into water once in three or four days, its verdure and elasticity will be fully preserved, and a block of wood about an inch thick, and stained black or green, if placed under the basket, will prevent all risk of damage to the table from the moisture. To make such baskets affords much pleasant social amusement for children, who will find a constantly renewing pleasure in varying their appearance. One week, Snowdrops and Crocuses will cluster among the mossy edges; then will come groups of "dancing Daffodils" and Hazel catkins, which, mixed with Ivy leaves, make almost the prettiest dressing that can be found for it. In another week or two Anemones, Hyacinths and Jonquils will crave admittance into the place of honor; and long before the basket is decayed Roses, Lillies, Jas-

mine, and even Carnations, will have sprung into beauty, and had their day in the favorite moss basket.—*Cassell's Popular Educator.*

VENUS' FLY-TRAP.—The well-known Venus' fly-trap, *Dionæa muscipula*, is the best of all the fly catching plants to keep in a window for occasional amusement, and it is moreover a proper adornment, for the beauty of its fringed leaves is at once unique and interesting. Droseras are, of course, to be desired by such as study "carnivorous plants," but they are so small and slow in their movements as to try one's patience somewhat; whereas the *Dionæa* is comparatively large, with a quite mechanical gin-like leaf and very bold fringe of hairs that may be likened to the iron bars of a prison, and are as such to the captive flies that the gin has closed upon. Moreover, the *Dionæa* catches and keeps and digests large flies which, generally speaking, Drosera does not. Mr. Bull, some weeks since, mentioned incidentally that he had received a very large consignment of *Dionæas*, and I at once secured a few for myself and friends. After three weeks' occupation of tables in windows the plants distributed are all, without exception, perfectly healthy and as beautiful as when they first came to hand. The dozen I reserved for myself have been standing in a glass pan, with about an inch of water, in an airy greenhouse, and these also are still in perfect condition. Water is the main requirement of this pretty plant, and a medium temperature suits it perfectly.—*Shirley Hibberd in Gardener's Magazine.*

AGAPANTHUS UMBELLATUS.—We remember having heard some one say he could not flower the Blue Mexican Lily. It must have been a man, for all the ladies succeed with it. We have hoped before now that Miss G. or some of our other good friends of the fair sex would have been moved by the spirit of Flora, to relate their experience, for the benefit of the sterner creatures, but as they have not, we venture to give the following from the *Dublin Gardener's Record*.

"What a fine old plant this is for the conservatory in August and September, and what a grand effect it produces, with its beautiful umbels of bright blue, standing boldly erect among other plants, contrasting well with everything around them, and at the same time being strikingly conspicuous. Although old as this plant is, we seldom see it used so frequently as it should be, and yet it is not from any difficulty there is attached to its cultivation, for it is the most easily grown

plant I know of. It may be propagated by division of the roots, off-sets, or seed. From the latter, by sowing in a pot any time between March and June, so that the seedlings may acquire sufficient strength to resist the changes in Winter. Plunge the pot to the rim in gentle bottom heat, and keep the soil constantly moist, both before and after the plants appear above ground. Pot-off as soon as the seedlings can be conveniently handled, and attend afterwards to watering, shading, &c., as is usually done with such seedlings. Division of the roots and off-sets are a ready means of extending the stock. For a compost, a light loamy mixture, with sand incorporated to extent of one-third of the bulk, will do.

In the general culture, little need be added to the attention generally demanded by free-growing plants. They all delight in high living. A rich heavy loam, with a third of well-reduced cow manure and sharp river sand thrown together, without riddling, will make them grow strongly and well. Admit air abundantly, administer water copiously in the growing season, adding a stimulant in the shape of a little guano to the water, when the flowers are in the process of formation; and wherever situated, air plentifully supplied ought never to be neglected when the flowers are expanding, else the flowers will be deficient of their bright blue, so much appreciated, as well as in good substance. When the flowers have dropped, cut down the stems half-way and prevent seeding, unless particularly wanted, when one crown will be enough to leave. The plants should be allowed to stand in a good position in a vinery or other glass structure in the Autumn, in order to have the crown well matured for the following season. They may then be allowed to go quietly to rest, by withholding water to a considerable extent, permitting the soil to get almost dry in their pots during Winter. The plants will then be quite indifferent wherever they are placed. If below the stage of a greenhouse, they must be turned on their sides towards the sun, in order that the water from other plants may not saturate them."

SPECIMEN PHLOXES.—Sancho Panza asserts that it is not easy to make a silk purse out of a sow's ear, but we can often make something quite as pretty out of some very unlikely materials, and we expect the reader will agree with this after perusing the following, from Mr. Robinson's *Garden*:

"At this moment in the Paris Exhibition can be seen between the galleries reserved for the vegetables and the cut flowers, and near the conservatory constructed by M. Cochu, a very happy innovation as regards some remarkably fine Phlox decussata cultivated in pots. The innovation may be thus described: In the centre of a pot sufficiently large has been planted a Phlox, the shoots of which have been laid radiating towards the rim of the pot, where they form a circle and rise vigorously, giving a strong inflorescence. The number of flowering stems, sometimes reaching ten or twelve thus disposed as a sort of crown, afford a graceful and elegant effect."

We are often asked to go around and see how pretty a variety of Phlox, some friend has raised; but we would sooner take up our "beaver" and draw on our neat black "kids" to go and look at an old kind grown like that.

NEW OR RARE PLANTS.

A DOUBLE MEXICAN LILY.—As we noted in the Editor's English Notes, Mr. B. S. Williams, of London, has made a specialty of bulbs and bulb-like plants. We are told that he has been rewarded for some of his devotion by the blue *Agapanthus*, which has produced for him a kind with double flowers. This revives our interest in this old fashioned plant, but which one never neglects without a feeling of ingratitude.

IMPROVED ABUTILONS.—most of us can remember when *Abutilon striatum* was introduced and how much it was welcomed to greenhouse collections. Since then, other species have been introduced, and between them hybrids and crosses have been raised, until we are no longer merely thankful for what we can get, but are fastidious in our choice as to what will please us. Most of the older varieties like the original favorite referred to, have a lank, straggling growth, and improvers have kept a dense, streaky habit in view when selecting seedlings. Of the most successful of these efforts is Mr. B. S. Williams of Upper Holloway, London, who sends out *Abutilon roseiflorum*, and which is thus described:

"A garden hybrid raised in this establishment, the result of a cross between A. Darwinii and A. Boule de Neige; it has the dwarf free branch-

ing habit of the first-named parent, and the fine bold well-shaped flower of the second: the blossoms are produced in great profusion, and are rosy pink, shaded and veined with a richer tint

of the same color." Abutilons, generally, are among the most useful of winter blooming plants, flowering freely, and being of easy culture.



ABUTILON ROSÆFLORUM.

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

In those parts where the frost has not yet been severe enough to injure the Celery crop, it may

have another earthing up. Care must be exercised in the operation not to let the earth get into the hearts of the plants or they will be liable to rot. Where the plant has evidently

finished its growth for the season, measures should be taken to preserve it through the Winter. For family use, it is probably as well to let it stay where it is growing, covering the soil with leaves, litter or manure, to keep out the frost, so that it can be taken up as wanted. Where large quantities are frequently required, it is better to take it up and put it in a smaller compass, still protecting it in any way that may be readily accessible. It always keeps best in the natural soil, where it is cool and moist and free from frost, and whatever mode of protection is resorted to, these facts should be kept in view. Beets, Turnips, and other root crops, will also require protection. They are best divested of their foliage and packed in layers of sand in a cool cellar. Parsnips are best left in the soil as long as possible. If any are wanted for late spring use, they may be left out to freeze in the soil, and will be much improved thereby. Cabbage is preserved in a variety of ways. If a few dozen only, they may be hung up by the roots in a cool cellar, or buried in the soil, heads downward, to keep out the rain, or laid on their sides as thickly as they can be placed, nearly covered with soil and then completely covered with corn stalks, litter or any protecting material. The main object in protecting all these kinds of vegetables is to prevent their growth by keeping them as cool as possible, and to prevent shriveling by keeping them moist. Cabbage plants, Lettuce, and Spinach sown last September, will require a slight protection. This is usually done by scattering straw loosely over. The intention is principally to check the frequent thawings, which draw the plants out of the ground.

In reviewing the progress of fruit culture, it is remarkable how much we have gained in Grape knowledge the few past years. We tried the foreign Grape in the open air and failed, and then fell back on the improvement of our native kinds, but we had scarcely made much headway before mildew, rot and insects gave us hard work to do, and after all, seemed likely to beat us. We found we had fallen into barbarous modes of propagation and culture. We gradually came to think Grape culture hardly worth pursuing. We left the whole thing to nature in a great measure, and we were surprised to find how much better the Grape vine did. Then it was resumed under more sensible auspices on the rules derived from sad experiences, and now we find no more difficulty in raising Grapes from improved varieties than from any other kind of

garden fruits. The Phylloxera is still troublesome, but not nearly so bad as it used to be, and not because we have found out any particular remedy, but the plants themselves seem to suffer less. It is probable that more rational methods of culture have given them greater resisting power, and then, entomologists tell us that as fast as one insect enemy increases and threatens to overpower us, an aid generally comes from some other insect which feeds on and keeps down our foes. At any rate, we go on and plant the rarer and choicer kind of Grapes with much more confidence than formerly.

In Plums, however, no insect foe seems to have come to our assistance in our little unpleasantness with the curculio, and we do not know that we have gained much in our knowledge over past times. It is still some trouble to get good Plums, though the improvements from the Chickasaw are giving us something in the place of nothing.

In the Peach the great run has been to see who shall be in the market first. There appears to have been some little gain here, though it is rather from the degeneration of the older kinds. But then why is this? There ought not to be degeneracy, if culture was what it should be.

It is much the same with the Strawberry. We have some very good new kinds, but none better than we have had in the past, and they are valuable chiefly because the older ones have not done as well by us, as we think we have done by them.

In the Raspberry, there has been no gain of late years. From time to time, younger and more enthusiastic fruitists have introduced new kinds of European races, fancying, perhaps, that they were "hybrids" or "crosses" with the native kinds, or flattering themselves that there was some good reason why they should be more successful than those who went before. But the older ones stood charitably by and shook their heads in silence. They did not want to throw cold water on efforts that might by a bare possibility succeed. But where are the improved Raspberries now? In good Raspberries, we are rather the worse off than ten years ago. This is, perhaps, owing to the attention given to the "hardy," but still inferior native kinds, which has led us to forget the little we knew of the much superior kinds of foreign breed.

On the whole, we would suggest that we have been looking too much to improved kinds in fruits, and too little to common sense modes of

culture. We spoil our good sorts by bad treatment, and then look for the remedy in new varieties. We believe we cannot offer our readers at this time any more profitable "Seasonable Hints" than to look up and ponder what has been offered from time to time in our pages, on common sense fruit culture.

COMMUNICATIONS.

SUMMER SHADE FOR APPLE TREES.

BY MR. F. W. WOODWARD, EAU CLAIRE, WIS.

Numerous have been the articles written in our horticultural journals upon the advantages or necessity of shade from the Winter sun, or protection to the trunks and larger limbs of fruit trees in cold northern latitudes. This protection has been largely given in this State, still the trees die, often by wholesale, and with the surviving it is only a question of time. Out of fifty varieties planted in my own grounds, but three trees survive, these are the Walbridge, Alter and Plumb's Cider. The two last are weak and diseased, but the Walbridge is in perfect health; has not shown a sign of failure during seven years, though a tree of the same variety within ten feet of it succumbed long since. My attention has often been called to the vigorous tree and to the solution of the question of its healthy growth. In conversation with a friend lately, about my failure with the Apple, he said, plant some hardy tree, a Transcendant Crab, for instance, on the south side of your apple trees and near enough to shade them from the Summer sun, and watch the result. He mentioned a case where a neighbor had planted alternate rows of Apple and Crab trees so near that the Crabs shaded the others, and they had not been injured by a cold of 40° below zero. Here then was the secret of my success. My tree had never had Winter protection, but on the south side of it within a few feet stood a large Crab tree that shaded the Apple during the hottest hours of the day in Summer. The conclusion to be drawn from these facts would indicate that Summer shade should be given, either by planting evergreens in our orchards, as advocated by Mr. Elliott, or by alternate rows of trees of unquestioned hardiness, near enough to shade those of a more tender constitution.

THE TRUE GUMBO.

BY MISS M. MUMFORD, WASHINGTON, D. C.

The *American Agriculturist* is right, Gumbo is the name of the dish, or rather soup, made of Okra. The compound of which soup is also called Gumbo, is made from Sassafras leaves dried and made into a powder called Gumbo fili. Not quite certain about the spelling of the latter, pronounced as spelt fele.

FAST BUDDING.

BY C. J. BLACK, HIGHTSTOWN, N. J.

Very few who are unacquainted with the art of budding will believe how rapidly it can be performed by experts. Some twenty years ago when I first commenced the nursery business it was thought that a man who budded 2000 Peach trees in a day was very expert, and if he did more than that many, he must slight his work. The number has been gradually increased, until now we can find occasionally a man who can bud 5000 trees in a day of ten hours. The largest amount I have ever heard of was done by our men the past season. My brother and two young men in our employ, with three tiers, six in all, budded and tied 40,800 Peach trees in three days of ten hours each. I have occasionally heard of a large number set in one day, but this is the largest number I have ever known budded in the time. If any one knows of better work than this, please report.

ASPARAGUS CULTURE IN ENGLAND.

BY MR. WM. ROBINSON, EDITOR OF "GARDEN,"
LONDON, ENG.

Referring to a paragraph in a recent MONTHLY, allow me to say that as yet there has been no competition for my prize in England, nor will there be for some time, to allow full time for preparation. The Asparagus you allude to was merely a head obtained after a few years' trial of the open planting system where previously no good Asparagus was obtainable. As my prize will run over seven consecutive years, I hope that at some of the competitions we may have the pleasure of seeing samples of the best American grown Asparagus. I was not in America during the Asparagus season, and therefore I can only speak from seeing some preserved American Asparagus. It seemed all that was most desirable in size and quality.

GRAPE CULTURE IN TEXAS.

BY PROF. S. B. BUCKLEY, AUSTIN, TEXAS.

An article with the above heading in the September number of the MONTHLY, by Mr. Bustrin, of Dallas, Texas, is entirely wrong in its statements about what I have published on the culture of Apples, Grapes and Raspberries in Texas. I never said or wrote that Northern Apple trees would not grow in Texas, but I did say that to succeed well with the Apple in the warmer portions of Texas, it is of the greatest importance to get Southern varieties from reliable Southern nurseries. This much and no more, and I repeat it. By the warmer portions of the State I mean the latitude of Austin and southward to the Gulf.

I know just as well as Mr. Bustrin that Northern Apples often do very well in northern Texas, where there are many fine Apple orchards, and I have alluded to some of them in my reports on the geological and agricultural survey of the State. Nor did I publish, that Grapes will not succeed well in Texas. Far from it. I think there is no part of the United States which has greater advantages for Grape culture than Texas. With regard to Raspberries, I stated that the black caps did well in this vicinity and that other kinds did not. This is all. I know this to be true from repeated trials. I presume other kinds do well in the northern portion of the State.

HOOSAC THORNLESS BLACKBERRY.

BY MR. GEO. WRIGHT, ROCK FALLS, ILLS.

I think a large number of the readers of the GARDENER'S MONTHLY are looking for some report of this Blackberry, which was advertised with so much promise three years ago. I paid a large price for a few plants, and during the first Summer found them running on the ground six or eight feet long. They stood the hard Winter of 1876-7 without injury, and bore no fruit to speak of last Summer, but grew stout canes six feet high, which I clipped back to two feet, and this Summer they have been loaded with a small-sized perfect berry, which is quite sour and bitter—more so than Kittatinny or the wild berry. To those who can raise the Kittatinny, I would say, let the Thornless alone. To those who want a hardy berry I would advise the Snyder.

I do not wish to discard the Thornless on my grounds, for of the three varieties named, this is

the only one which has furnished sufficient berries for a pie. The Kittatinny has proved too tender, and this season the birds took the Snyder as fast as they ripened. Of course the remedy is to plant more than the birds can eat, and then I shall try to get along without the Thornless.

A GOOD WAY TO WORK OVER LARGE FRUIT TREES.

BY JAS. M. HAYES, DOVER, N. H.

It might be of interest of some to the readers of the MONTHLY for me to describe a method of working over some Flemish Beauty Pear trees, upon which the fruit cracked so badly as to render them worthless. Last Summer, in the budding season, I budded all over the trees into all the limbs which I thought would form a perfect head. The buds all "took," and the present season have grown remarkably. To be sure this is no new discovery, but many fruit growers think that there is no way to work over a large tree except by the old-fashioned mode of cleft-grafting, and which often produces unseemly gashes upon the tree, and which it often takes a number of years for the tree to overcome. Hence I speak of this method of budding into the limb, and I think it may be of service to some, who like me are troubled with several worthless varieties of the Pear that are rendered so by cracking.

VACARIES OF THE PEACH.

BY MR. O. A. ALEXANDER, MT. PULASKI, ILLS.

The communications from Mr. Downing and others in the August and September numbers have moved me to add my mite to the—confusion, shall I say? that dominates the Peach question. But out of chaos comes order, and possibly I can facilitate that result a little in the present instance. If the illustration is allowable, I would suggest that this has proved to be an eclipse year of the Peach, giving us very unusual facilities for studying its coronal phenomena. I mean by this that its growth and general behavior have been so far abnormal as to give us views of some of its characteristics much clearer than the oldest of us, perhaps, ever had before.

In the August number you say: "It is evident that comparative ripening is, in some respects, an unknown quantity." I quote this to add that not only is it the literal truth, but more modestly put than the facts in my own knowledge, as well

as those you have published require. I first began to notice these facts more closely, June 19th. Being in town, I was solicited by some who had purchased trees of my own seedling, the Alexander, to see the Burns Peach, so-called, which had caused some stir by a few ripe specimens, their own showing no signs of ripening soon. Had they got spurious trees, or were they so far distanced by a new competitor? It had every appearance of an Alexander except its perfect adhesion to the pit, which led me to think it must be different. On coming home, I began to investigate, and this is the result. I found larger specimens by more than one inch in circumference, some of them ripe, but all with the same tenacious hold upon the stone. This was characteristic of all the early Peaches I had from first to last, not excepting the Beatrice, and including some other early seedlings of mine, which were completely free when they fruited before. In one row, were about two dozen Alexander trees, some of them in the condition stated, and some with fruit yet in the green stage, and which, according to my best recollection, did not ripen for some two weeks subsequently. These trees were more or less mixed together, so that soil and situation cannot possibly account for the difference. I have two Amsden trees, twenty-four feet apart, one of which ripened its fruit at least a week, I believe, before the other.

To present and enforce a point right here, which I think worthy of a good deal of thought, I will select of my Alexander trees, from each extreme, the earliest and latest. If one of the two stocks used had carried a bud of the Amsden, Honeywell, or Early Canada, which Mr. Downing thinks about alike in earliness, and had behaved in all other respects as at present, and I had had no other tree of either kind in bearing by which to correct the error, it is plain that one or the other would have commended itself to me over its rival, not only by the difference in period, two weeks or more, but by the superior size of its fruit.

Another important fact should here be stated. The most vigorous trees, those making the most wood growth, bore the latest and smallest fruit, and, so far as I am able to say, in proportion to that vigor. Can borers alone be responsible for all this difference, or does the character of the stock contribute its share; or should some other, or additional element be sought for?

I have spoken of ripe Peaches; I ought to correct this by saying, that no such phenomenon as

legitimate ripening, particularly of the early Peaches, occurred here this year to my knowledge. As early as February the buds began to swell freely, growing and stopping in accordance with the alternations of heat and cold, till they finally softened, preparatory to rotting an entire month in advance of the usual period. The result was one side hard, the center tough and tenacious, and the whole unpalatable and unwholesome. Another result was unusually large fruit. A Hale seedling, a genuine cling, had during three previous years produced small fruit invariably, less than six inches, I judge. This year its entire crop of five Peaches measured from nine and one-quarter to nine and three-quarter inches. These, ripening later, were quite good, though not so sweet as formerly.

EDITORIAL NOTES.

INFLUENCE OF THE SUMMER ON HARDINESS IN WINTER.—The reader will peruse with much interest, Mr. Woodward's notes on "Summer shade for the Apple." It confirms a point frequently made by the *GARDENER'S MONTHLY*, that when a tree's vital powers are strained by Summer heats or Summer drouths, such a tree is unfitted to endure a severe Winter. And the reader will also remember that it is because a clean surface in an orchard, often implies an excessive and deleterious increase in the temperature of the earth, among other reasons, that we recommend the culture of grass in orchards in many cases.

ABOUT MOLES.—We were always taught that it was not polite in company to make fun of stupid peoples' blunders. There is no objection to this amusement when we are by ourselves, and therefore, the reader can take this paragraph which we cut from an agricultural contemporary, into some quiet corner, and all alone by himself, enjoy a good laugh over it:

"A French naturalist, of the name of Henri Lécourt, devoted a great part of his life to the study of the habits and structure of moles, and he tells us that they will run as fast as a horse will gallop. By his observations he rendered essential service to a large district in France, for he discovered that numbers of moles had undermined the banks of a canal, and that, unless means were taken to prevent the catastrophe, these banks would give way, and inundation would ensue. By his ingenious contrivances and

accurate knowledge of their habits, he managed to extirpate them before the occurrence of further mischief. Moles, however, are said to be excellent drainers of land, and Mr. Hogg, the Ettrick shepherd, used to declare that if a hundred men and horses were employed to dress a pasture farm of 1500 or 2000 acres they would not do it as effectually as moles would do if left to themselves."

GREEN MANURE.—Sowing the Cow-pea, and ploughing the vines under as green manure, is very common in the South. The *Southern Enterprise* notices a patch of forty-one acres ready for turning down, on the farm of Mr. Peters, near Calhoun, in Georgia, which was sown in June 14th, putting two bushels to the acre. On the 12th of September three feet of the vines were flat on the ground making a mass of vegetable matter as high as one's hips, and from the hips to the waist the tops were erect. Three-horse ploughs are used to turn them down.

GEORGIA PEARS.—Pear growing seems a success in Georgia. The *Enterprise* says that Mr. W. W. Woodruff, of Spalding, ships them in large quantities profitably to Northern markets. Seckel, Bartlett and Duchess, are the kind named, and the Mount Vernon is referred to as promising well.

LATE PEACHES.—With some large and remarkably delicious Peaches on the 7th of October, we had the following note from Mr. Lorin Blodgett, of Philadelphia. It is remarkable that the Peach is not oftener employed as a fruit tree in city yards. At any rate, such remarkable success as Mr. Blodgett's, should incite some to try what they can do :

"The eighth full crop of seedling Peaches has this season about sixty bushels,—grown on 25 by 100 feet—never less than 30 bushels, and the best trees always full.

"Two groups were planted in 1866, the trees began bearing in 1870, and now I have had eight crops (see GARDENER'S MONTHLY, November, 1871) lasting from August 16th, to October 15th, each year; always abundant, and the latest ones excellent in every respect. No. 31 is a seedling from No. 3, both very large, often eight ounces in weight; soft, almost to melting, and very rich in flesh. They have furnished a full supply for putting up, with scarcely any sugar, and for family use for two full months."

OCTOBER PEACHES.—At this writing, October 8th, the Peach has almost disappeared from the

Philadelphia markets. Very few come in for sale after the Smock. Why would not there be profitable sale for such superior late sorts as those Mr. Blodgett sends us?

A NEW SOURCE OF PROFIT.—The country being about tired of trying how much frost the Eucalyptus will stand, the *Baltimore Gazette* calls attention to the fact "that a very fine article of Sweitzer cheese can be made from the milk of the Cocomut. The Cocomut could be very profitably cultivated in the Banana zone, along the Northern Pacific railway. Gen. Dook has it in his power, too, to simplify the labor question by introducing the Bread-fruit tree in this country. It is believed that by crossing the Bread-fruit tree with some active variety of Spring Wheat, a species of vegetation could be produced from which the agile Greenbacker could pick his hot rolls in the morning without a particle of labor. By grafting the Bread-fruit tree on our common Butternut tree, it is thought that the splendid buttered waffles, so much in vogue with the bondholders and lickspittle capitalists, could be produced in profusion and at little or no cost."

OLIVE OIL.—This is said by a correspondent to be a very successful product of Santa Barbara, California.

CALIFORNIA RAISINS.—The Raisin industry of California is now on a well established basis, and competition with the European product is now the order of the day.

TEXAN EARLY PEACHES.—Texas is now entering the lists with her early Peaches. Three kinds, Dr. Brice, Ashley and Baker's Early, are named as competitors with Amsden and Alexander.

WILDER PEACH.—This has fruited in Texas, and is found to be a few days earlier than Alexander. Mr. Munson finds it a "very beautiful fruit" there.

JAPANESE MUSHROOMS.—One of the industries of Japan is the cultivation of Mushrooms, which are exported in large quantities from that country, and some interesting information respecting them is given by Consul Robertson in his report on the trade of Kanagawa, lately issued. The best of the edible species of Mushrooms are known as "Matsutaké" and "Shii-take." The difficulties attendant on preserving the former kind almost exclude them from the market for export; for not only do they decompose very

rapidly, but even when successfully dried are nearly tasteless, and thus useless in cookery. The Shii-take species, however, have this peculiar excellence, that, though all but tasteless in their raw state, when they are dried they have an extremely fine flavor. The quantity that grows naturally on the decayed roots or cut stumps of the Shii tree is not sufficient to meet the demand for them; consequently much skill has been brought to bear on their cultivation, notably by cutting off the trunks of the Shii and other trees, and forcing the growth of the Mushroom on them. Different varieties of Oak are most in favor for the cultivation of the Mushroom, the tree known as the Shii giving, however, the best results.

About the beginning of Autumn, the trunk, about five or six inches in diameter is selected, and cut up into lengths of four or five feet; each piece is then split down lengthwise into four, and on the outer bark slight incisions are either made at once with a hatchet, or the cut logs are left till the following Spring, and then deep wounds, seven or eight inches long, are incised on them. Assuming the first course to have been pursued, the logs, after having received several slight incisions, are placed in a wood or grove where they can get the full benefit of the air and heat. In about three years they will be tolerably rotten in parts. After the more rotten parts are removed they are placed against a rack in a slanting position, and about the middle of the ensuing Spring the Mushrooms will come forth in abundance. They are then gathered. The logs are, however, still kept, and are submitted to the following process: Every morning they are put in water, where they remain till afternoon, when they are taken out, laid lengthwise on the ground, and beaten with a mallet. They are then ranged on end in the same slanting position as before, and in two or three days Mushrooms will again make their appearance. When the logs are beaten so heavily that the wood swells, Mushrooms are induced of a more than ordinarily large growth. If the logs are beaten gently a great number of small sized Mushrooms grow up in succession. In places where there is a scarcity of water, rain-water should be kept for steeping the logs in.

There is yet another plan. The cut logs are buried in the earth, and in a year's time are dug out and beaten as above described. The Mushrooms thus grown are stored in a barn, on shelves ranged along three sides, with braziers lighted

under. Afterwards they are placed in small boxes, the bottoms of which are lined either with straw or bamboo mats. These boxes are then ranged on the shelves, and all approaches carefully closed. An even degree of warmth is thus diffused. The boxes ranged on the upper or lower tiers are constantly changed, so that the contents of each are thoroughly dried. Another mode of drying is to string the Mushrooms on thin slips of bamboo, which are piled together near the brazier; the heat is well kept in by inverting a closely woven basket over them. Dried Mushrooms, which are much liked by the Chinese and largely consumed by the Japanese, retain their flavor for a great length of time, and thus bear transport to any distance very well.—*Pall Mall Gazette*.

NEW OR RARE FRUITS AND VEGETABLES.

SHARPLESS SEEDLING STRAWBERRY.—In the admirable Descriptive Catalogue of Fruits of Ellwanger & Barry, just received, there is a beautiful colored plate of the Sharpless Seedling Strawberry.

THE PRENTISS GRAPE.—We have from Mr. Hubbard, leaves of the Prentiss Grape, showing their hardy and healthy character. It appears to be derived from *Vitis labrusca*.

BONNE DU PUIITS ANSULTS PEAR.—We are not sure that we have the orthography of this new fruit correct, and even if we have we would suggest that the barbarous thing be sent back to be re-christened, feeling sure that it cannot travel with this huge tail. We were about to throw it out, but the aroma plead for it, and so we tasted it, and then felt the more pity that such a remarkably fine fruit should be saddled with so much dead weight. We are indebted to Ellwanger & Barry for our taste of it.

NEW LATE PEACHES.—C. W. Westbrook & Co., Wilson, North Carolina, write: "I mail you a specimen each of Harris' Winter, Lady Parham and Baldwin's late Peaches, all free stones. The Harris is a new Peach and ripened last year the 1st of November. It is just now coming in and will last a month. It is frost-proof, never fails to bear, has large flowers, very productive and keeps well, has been kept until Christmas. How do you think it will do for the South, for market? Will it do well in your

market? The Baldwin and Lady Parham are nearly gone. Both ripened last year middle of October."

[These were medium sized Peaches, with dry firm flesh, and would no doubt be excellent keepers. Where there would be a profitable demand for Peaches at Christmas, such a late character would be very valuable.—Ed. G. M.]

SCRAPS AND QUERIES.

PEARS IN THE WEST.—An Indiana correspondent, writes: "I have a fine crop of Pears. Among the new varieties, the Mount Vernon is fruiting the second time, and promises well, to say the least. Bartlett, however, is the standard, or rather most popular, but as it has to compete with a heavy Peach crop, it does not bring a very good price. Apples a fair crop. Grapes poor."

GRAPE BORDERS.—J. C. S., Normal School, Hampton, Va., writes: "I have a lean-to greenhouse twenty-four and a half feet long, and about thirteen feet wide, in which I wish to force Grapes. It is heated by steam pipes. One end is against the dwelling. The outside border is about four feet wide and two feet deep, and in it are planted close to the brick wall of the greenhouse, three Black Hamburg vines, four or five years old. They are not more than three feet high, having made but little wood this season, and the several irregular canes are not much

thicker than one's finger. Will you kindly inform me through the pages of the MONTHLY, how I may proceed in order to get Grapes in cold weather, and also, how many vines I may grow in such a house? There are two stages, one in front, one in the middle, and shelves, like stairs, at the back. May I grow plants without detriment to the vines before they are old enough to fruit? As the vines are so old, I hope to get fruit from them sooner than from young ones. May I bring them through the brick wall, mulching them during Winter? If they are to be treated as though they were young vines, they might as well be taken up and planted inside. In that case, the front stage would of course, have to be removed."

Grape vines three or four years old and not over three feet high, must have something the matter with them. What is the trouble cannot be gathered from our correspondent's communication. Vines do better as a rule when the roots are in the outside border, than when the plants are set inside. We should keep the plants outside, drawing the vines in through the wall. But as the old ones have done so badly, would new ones do any better? Perhaps the roots are too deep; or the phylloxera may be injuring them. As we remarked to another correspondent recently, plants and Grape vines can be grown together only where the gardener has very superior skill and experience. It is an art that cannot be taught, and the majority of even good gardeners will fail in the attempt to learn it by themselves.

FORESTRY.

COMMUNICATIONS.

FELLING TREES.

BY DR. A. FURNAS, DANVILLE, IND.

Allow me to differ with your correspondent, Margid Digram, in the September number of the GARDENER'S MONTHLY, page 274. His plan of digging up green trees and pulling them over with a rope, looks well enough on paper, but it is not practical for large tracts of land. First, it will cost from two to fifty times more than the

land is worth to rid it at once of stumps, and when this is done, the diverging roots of many kinds of timber are often much more in the way of the plow than the stump. The Poplar, Beech, Elm, and White and Black Walnut, are especially troublesome to plow any way near their stumps. The common Gray Ash, also extends its roots very near the top of the ground, but they are so brittle that a team will often break them two or three inches in diameter. Another objection to his method is the serious injury to the ground thus hastily brought into cultivation.

It neither works so lively, or produces so well. The better way and the one universally followed, is to "shrub" out the underbrush, and "deadend" the larger trees that are not valuable. That is in the month of August, cut down all the small brush up to three or four inches in diameter, and girdle the remainder of the larger trees that are not worth saving. In six years it will be ready to burn quite well, but will do all the better for laying two years longer; at which time, fire in a dry time will often run all over the ground, and the work of "clearing" amounts to but little. Dead stumps are easily burned out, and those terrible roots that have "whacked" so many shins, are all rotten, and the plow meets with comparatively little obstruction. This gradual change from shade to sunshine, with the heavy enriching the ground receives from decaying vegetable matter, eminently fits it for heavy crops of Corn and Wheat, and just the place to grow your nice thrifty nursery stuff. I commenced work of this kind in 1826, some fifty-two years ago, in central Indiana. I have helped clear a large farm for my father, and then one for myself, have been in many a "smoke," and I know, whereof I testify.

THAT WEATHERSFIELD ELM.

BY JAMES J. H. GREGORY, MARBLEHEAD, MASS.

While reading the interesting article of Mr. Manning, on the Byfield Elm, I was reminded of the immense Elm I saw in Wethersfield, Connecticut, a few years ago; and I write to ask if some correspondent in that town, will not favor us tree worshippers with a description of the same, giving measurements after the excellent plan of Mr. Manning, which almost builds the tree before our eyes. The idea of the size of the trunk of many large trees, particularly of the Elm, is oftentimes but obscurely conveyed by writers, because they fail to state whether the circumference given was of the trunk directly, or included the ridges, or followed the depressions of the tree. I have an impression that one of the limbs of the Weathersfield giant, was about fifteen feet in circumference. Taken as a whole, it is decidedly the largest Elm I have ever seen in New England, and my observation included the great Elms of Northampton, Hatfield, Deerfield and Cumberland, of the Connecticut valley. By the way, I remember that thirty years ago I was told of the remains of the trunk of an old Elm standing in Hatfield, that measured forty-two feet in circumference, precisely the measurement

of the Byfield tree, as Mr. Manning made it when following its depressions, and I presume the Hatfield tree was measured in the same way.

I remember some twenty-five years ago measuring a fine Elm on the Cohasset road in this State, (Mass.), front of the residence of Deacon Cushing; it gave eighty-five feet in height, and would nearly, or quite have touched the ground all around had it not been necessary to cut the branches away on one side where the public road passed. It was one of these magnificent umbrella Elms, with a top almost spherical. I noted at the time that, among several seedlings of some size that had sprung up in the vicinity were several of the same symmetrical form, which led me to believe that probably the tree would repeat itself in its seedlings; probably it merits the attention of nurserymen. This grand monarch bore on its side at that time, a piece of board which was carefully painted "Planted 1726." I trust Mr. Editor, if we are favored with the dimensions of the Weathersfield Elm, we should have given in the circumference of that main limb, and better if of all the principal limbs. If any funds are needed to hoist a ladder up there for the purpose, draw on me for the same.

THE LOCUST TREE.

BYS., RUTGERS COLLEGE, NEW BRUNSWICK, N. J.

The following statistics of Locust timber cut on the farm of J. G. Smock, near Holmdel, Monmouth County, N. J., show the value of this tree, and the desirableness of planting it more extensively. This farm has several acres of banks and ground unsuited for tillage. About sixty years ago Locust trees were set out at wide intervals on these banks. The trees first set out were cut years ago. From these the whole area was covered by a thick second growth, and during the past year the trees of this growth were cut. These have been worked into fencing timber, and have yielded 4500 five-hole fence posts, which at forty cents, are worth \$1800; 800 garden fence posts, at twelve cents, \$96; and about 700 fence stakes; in round numbers the fence materials may be put at \$2000. The cost of cutting is offset by the fuel in shape of tops which are unfit for other uses. From one grove thirty-seven hundredths of an acre in extent, there were 1400 five-hole posts; 150 garden-fence posts; and 200 fence stakes cut. At this rate the product of an acre would be about \$3000. It must also be stated that these Locust groves were in good grass and

the pasturage thereon was an item not to be omitted, although in this case it was not estimated. These figures show that the Locust tree is one of our most profitable forest trees, and its adaptation to uneven ground, or side hills which cannot be profitably cultivated, adds to its value. The more extended use of this valuable wood ought to claim the attention of our people, and widen the area of its cultivation.

EDITORIAL NOTES.

A LARGE CATALPA.—Mr. Horace J. Smith writes: "I measured a Catalpa tree in Fairmount Park, on the river drive, west side, this morning, and found it to be thirteen feet in circumference, at an average of one foot from the ground (it is on a hillside), showing a trunk four feet diameter. Would a section or slab be of interest?"

[What will those Western friends think who believe Southern Indiana produces the only "hardy" Catalpa? Though Mr. Smith does not say so, we can assure them that this Pennsylvania tree is not growing in the mammoth conservatory in Fairmount Park, but is actually in the open air, and has probably been there through a hundred Winters. How many annual rings has it, Mr. Smith? But we hope there will be no attempt to take a slab from it. Better let the old Catalpa stand.]

LOCUST TIMBER.—We call particular attention to an article on Locust timber in this month's issue, as showing how much more profit there may be in timber raising than is generally supposed. It does not require a very long life to bring a plantation to profit. It is well to remember that profitable timber culture does not mean copying what Mr. Smock has done, but in finding out just what is suited to one's soil and locality, and what is likely to be in profitable demand. In many parts of our country the Locust is so seriously affected by the Locust borer, that its growth is comparatively slow, and the

quality of the timber injured. In other parts of the country the Locust leaf miner is a serious objection. Then the timber is unfit for railroad ties, or for any purpose where nailing to it is required, and all these, seriously limit its market. For mere posts, firewood, or street pavements, it is among the best of all woods.

NATIVE SUMAC.—The *Reading Times and Dispatch* says: "There is a steady market at present for the leaves of the wild Sumac which grows upon the hills and commons of Berks county, the demand being greater than the supply. The leaves are much used in the tanning of Morocco leather, for the manufacture of dyes and other purposes. In some localities the gathering of Sumac leaves at this season of the year is quite an industry. The branches of the Sumac bushes are broken off, loaded upon hay wagons and, after being cured, conveyed to the nearest railroad station. There is considerable Sumac in Montgomery county, and there is also a good deal in this county along the Wissahickon, Schuylkill, etc., and this may be a hint worth taking."

SCRAPS AND QUERIES.

CATALPA COFFINS.—A correspondent suggests that on account of its durability, this timber deserves the attention of cabinet makers and undertakers.

ALNUS OREGONA AND ACER MACROPHYLLUM.—A correspondent writing from Washington Territory, says the *Alnus Oregona* is an excellent timber tree there. It grows rapidly, makes splendid fuel, and is valuable for charcoal. It is also extensively used by cabinet makers, being almost the only wood used for bent work in their business. Without giving its particular uses he also speaks highly of the *Acer macrophyllum* as a useful forest tree. We have heard before of its extreme beauty in the forests of that Territory, and the trees growing up in the Eastern States show its ornamental character.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

LIGHTNING AND BEECH TREES.

BY REV. L. J. TEMPLIN, HUTCHINSON, KANSAS.

I see a discussion in the *GARDENER'S MONTHLY*

of this question, as to whether the Beech tree is ever struck by lightning. With the general opinion against such an occurrence I think there is no question. The event is exceedingly rare: but from my own observation, I know the rule

has exceptions. I remember some twenty-seven or twenty-eight years ago a Beech tree standing in a wood just back of my father's residence, near the village of Blountsville, not far from the north-east corner of Henry county, Ind., was struck by the electric fluid. According to my present recollection, the tree was struck some twenty-five feet from the ground, and a piece three or four inches wide, and one and a-half inches deep was torn out from that to the roots. This is the only case of this tree being struck with lightning that ever came under my observation, although it was a common occurrence for other species of timber to be destroyed by this cause. The Beech makes an excellent shade tree, and is probably as free from danger from lightning as any that can be used for stock shelter in pastures, or for lawn shade trees.

ABSTRACT OF PAPER "ON HYBRIDS IN NATURE."

BY THOMAS MEEHAN, GERMANTOWN, PHILA.

Read before the American Association for the Advancement of Science, at St. Louis, August 1878.

The author shows that hybrid plants must be rare in nature, for the following reasons, which with the experiments and observations on which they are founded, were given in detail :

1st. Intermediate forms are thought to be hybrids, because they are intermediate ; but actual experiment rarely results in intermediate forms.

2nd. Hybrids, when fertile, rarely reproduce their exact forms from seed.

3rd. Hybrids could not therefore spread themselves over large districts and preserve their identity.

4th. The same two parent species rarely produce the same hybrid form though the flowers be from the same two plants, and though the act of crossing be performed at the same time ; therefore identical forms in distant places if of hybrid parentage, could scarcely have spread from one original, if at all.

5th. The wide distribution of some supposed hybrids, must therefore imply a remote origin in geological time, not well harmonizing with their supposed beginning between modern species.

6th. The facts connected with supposed hybrids in nature are more consistent with the theory of innate and sudden evolution of forms, as propounded by the author in former papers before the association.

EDITORIAL NOTES.

NATIVE PLACE OF THE MIGNONETTE.—It is now stated in the *Gardener's Chronicle* that no one has gathered the Mignonette truly indigenous anywhere.

WHEAT AND CHESS AGAIN.—The agricultural editor of the *Chicago Tribune* has seen, at last, a head of Wheat in which grew something which "in color, size and outward appearance was Chess." He then goes on to say :

"The head of Wheat was taken to Prof. Burrill, of the Industrial University, for his examination. Prof. Burrill is of the opinion that the grains shown are Chess, but does not say positively that they grew in the head of Wheat. We are of the opinion that they did grow there, and we doubt not that Mr. B. would say the same, where he not perhaps afraid that a positive assertion might subject him to ridicule."

It strikes us that this paragraph does great injustice to Prof. Burrill, whose reputation as a careful botanist is well known. Prof. Burrill is no doubt perfectly justified in withholding his positive assertion as a man of science, without any "fear of ridicule." Prof. B. would not long withhold his opinion if the facts could be proved.

THE ENGLISH SPARROW, AND SEEDS AND FRUITS.—"Maryland" asks: "Can you tell me positively whether the English sparrow will eat seeds and fruit?"

[Positively they will eat seeds. We have no knowledge of their eating fruits. There is no particular reason why they should not, for the robin is an insectivorous bird, but yet keeps a longing eye on our Cherry trees. It is likely these birds are all of one stripe,—a mixture of good and evil.—ED. G. M.]

WHAT IS A WEED.—A writer quotes Ralph Waldo Emerson as defining a weed to be "a plant whose use has not been discovered." If this be Mr. Emerson's, he had better try again, for a weed is not a plant the use of which has not been discovered. Numberless weeds, and vile weeds too, have very good uses.

CLEMATIS.—A correspondent of the *Gardener's Chronicle*, is puzzled over the pronunciation of this word. He has heard it pronounced "Clemattis," "Clemaitis," and "Clemawtis," and does not know "which is which." It is very singular that he does not seem to have heard of Clemma-tis which is the correct pronunciation.

ANDROMEDA ARBOREA.—This is the name of the specimens sent by R. J. Black, Bremen, Ohio. It is known as the "Sorrel tree," and in many respects is one of the most beautiful of the smaller trees of Northern Ohio. It is surprising it is not in more general cultivation.

SNOW PLANT OF CALIFORNIA.—The California *Horticulturist* for September, gives a colored engraving of this singular plant, *Sarcodes sanguinea*. It is of a blood red color "like a shoot of Asparagus," and is sometimes found growing through a thin stratum of melting snow in the Sierra Nevadas, whence its common name.

SULPHUR AND YELLOW FEVER GERMS.—Some people have assumed that the yellow fever is caused by vegetable germs generated in the atmosphere. It is very remarkable that no one seems to test the supposition, and decide positively whether it is or not so. When the celebrated horse disease was progressing through the country, such a theory was conjectured in relation to that malady, and then found to be a demonstrable fact. Moistened glass was exposed to the atmosphere before the disease appeared, and after it had arrived; and in all cases, on the glass in the latter case was discovered by powerful microscopes a minute fungus called *Aspergillus* and the same was found in the mucous discharge from the nostrils of afflicted horses. There could be little doubt that the *Aspergillus* initiated the horse disease. It is quite likely that some such minute body is connected with the yellow fever, but why not try whether it is so or not by systematic observations? In a New York paper recently, Mr. Peter Henderson points out that many forms of fungoid matter are destroyed by light doses of the fumes of sulphur that are not particularly injurious to the higher order of animal life; and if this disease is of this nature, relief may be sought for in this direction. It is worth more than a passing thought when Mrs. Ingram, of Nashville, tells us that in many places of every ten fever patients that go under a doctor's hands eight die. In New Orleans one-third die. There is certainly room for discovery.

Since writing the above, we note by the New Orleans papers that sulphur fumes have been most thoroughly tried, as well as other things, with no perceptible result.

One of the most valuable experiences is that of the steamer R. O. Stannard, which went from New Orleans to St. Louis and back. The cap-

tain appears to have had an idea that by strict popular precautions he could get through all right. He had the strictest attention given to cleanliness. The vessel was washed with sulphur white wash, fumigated thoroughly with tar and sulphur, and chloride of lime used freely, and the precautions were continuous, and careful. No better chance could offer for testing these precautions than in an isolated vessel like this, but the plague swept through his vessel as elsewhere.

The fact is we do not yet know that the fever poison is certainly fungoid germs, and this matter, as we have already stated is the first thing to be ascertained.

The whole subject interests horticulturists, of all others in the community, because the locations of our houses and the sanitary surroundings are among the first to be decided by the landscape gardener; and then again the knowledge which horticulturists have to gain of the working of minute forms of plant and animal life may be of good service in tracing out the origin of the plague.

The commissioners appointed by the government to investigate the matter, are no more likely to discover the cause than similar commissions have done, and their recent circular shows that they are not likely to do much. The twenty-five questions they have sent out for answers, remind us of some sent out by agricultural societies when they wish to find out which of the new fruits are best adapted to general cultivation. The answers will be more conspicuous for what they do not tell, than for what they do.

FRUITING OF THE STAPELIA.—This sometimes, but not often fruits under cultivation. Mr. Ammon Burr, of Dallas, Texas, has had one to seed. It is like most of the asclepiadaceæ in form. The flowers are well known for their singular appearance, which obtains for them the name of "Toad flowers," and for their fœtid smell, which attracts flies as dead bodies do. The flower is always well worth a study from its arrangements which are so constructed as to catch insects under some circumstances.

EXPERIMENTS IN TESTING SEEDS.—From time to time experiments have been published in regard to the quality of seeds. Some are bought from one place, some from another, and some from somewhere else. These are counted and sown side by side; fifty grow from one sample, sixty from another, seventy-five from another, and the results published to the advantage of one or

the other as the case may be. But these single experiments often do great injustice. There are scores of reasons why seeds do not grow besides their being bad. The only fair test of seeds, is to take five or more different lots of the same seed, and take the average for comparison for competition with a similar set from the other kind.

ERADICATING RARE PLANTS.—A correspondent of the *Gardener's Chronicle*, thus goeth for ye man who cleaneth out ye last specimens. We rather suspect he took care to have in his own herbarium a "*Malaxis paludosa*" a "*Cypripedium*," and a "*Lizard orchis*" before he saw "with horror" and so forth. Still the lover of rare plants, may sympathize with the wail which in his better moments he gives, especially as it is beginning to apply to our own country:

"In Britian it has been rendered necessary to legislate for the protection of wild birds, for the same reason; but as yet the law has not reached our wild plants, which, owing to the greed of eradicators, under the cognomen of botanists, are becoming more and more rare—nay, some are extinct; and owing to the spread of a taste for having in a garden what would look better wild, we shall soon have to go far afield to find a Primrose or a Fern. Would that eradicators would exercise their spuds on such plants as Docks, Dandelions, and Thistle, and deserve thanks instead of reprobation. We have heard of a collector who, once calling on a country botanist to inquire the whereabouts of a rare English plant, *Malaxis paludosa*, was asked if he were an "Eradicator," and replied he was a "Botanist," a talismanic term, which so touched the hearer that he kindly took some trouble to indicate the desired spot, when the "Botanist," espying in a damp spot a single specimen, sprang on the devoted plant and uprooted it, much to the horror of the ciccone.

O where are *Cypripedium*, the *Lizard Orchis*, &c., &c.? They are in Herbaria, if not eaten by beetles, and the fortunate owner of the last specimen is not ashamed to boast its possession. If it were the last Dandelion or Shepherd's Purse, he would be more deserving of credit."

HOW THE ROOT GROWS.—When the plant is in a natural state, the method of growth of the roots provide it with all necessary supplies. The rootlets, as has been said, lengthen at the extremities, and creep through all the little crevices and passages they can find, constantly tak-

ing new mouths to new food. In the soil of the garden subject to artificial difficulties, this is the reason why we keep the roots from being trampled on, and fork the borders to keep the soil open and free. Therefore also it is not good, except in particular cases, to use sifted earth, for it clogs hardly together, and therefore we often put brick rubbish and rough lumpy vegetable mould, or morsels of turf, that there may be sufficient passages for the roots; and here also is the reason of one of the most frequent disappointments to the amateur in moving plants. Some special plant is admired in a neighbor's garden, and a specimen is kindly bestowed; but who would offer a plant all loose earth? So, accordingly, before it is papered up, the remnants of a ball are smoothed, and kneaded, and patted, till it is as tough as a ball of dough, and the root-fibers are tightly fixed in the mass.—*Gardener's Chronicle*.

PASTEUR'S THEORY OF FERMENTATION.—A correspondent asks us to state in the *Journal* what is the so-called "Pasteur theory of fermentation." According to M. Pasteur, fermentation is a very common phenomenon; it is life without air, without free oxygen; and ferments, properly so-called, are organisms which easily accommodate themselves to this mode of life,—organisms independent of air, which grow at the expense of oxygen in combination with sugar. But moulds, generally living in the air, can themselves become ferments if they are compelled to vegetate without air. It also suffices to immerse saccharine fruits in carbonic acid gas to produce a spontaneous alcoholic fermentation, by a kind of perversion of the chemical process of nutrition, which is afterwards kept up by means of oxygen of the sugar. The vegetable cellule, instead of elaborating sugar, lives upon that which exists in the fruit, and transforms it into alcohol. Grapes, Melons, Oranges, if confined under a bell-glass filled with carbonic acid, ferment at once, though no trace of yeast can be discovered in the pulp of these fruits. While Plums exposed to the air become very soft and sugary, the same Plums in carbonic acid gas become firm, hard, lose much sugar, and, if distilled, yield alcohol. Hence there is every reason to believe that fermentation is nothing more than an example of nutrition by means of combined oxygen; but it must be added that free oxygen is necessary for commencing the fermentation by awakening the vital activity of the ferment.—*Journal of Chemistry*.

LITERATURE, TRAVELS ^{AND} PERSONAL NOTES.

EDITORIAL NOTES.

"OUR CHROMO."—If our readers will only wait patiently till next month, we think they will be pleased with a present we shall make them. It is not generally known that we started the chromo gift business. We cannot find out new customers, but each one of our readers knows his neighbor, and can easily introduce our magazine. So we wished to make our acknowledgements by a present, and determined to give each something handsome for the good services in our behalf. So we started the chromo—not "true copies of Love-in-a-mist," or what's his name "In-a-bush," and which "the receiver could not buy for five dollars," but which was generally sold in the end for a half cent per pound, "all ma'am that sich paper is bringing now," but something that may be considered, if so chosen, a part and parcel of the work. Of course those who come in "at the eleventh hour," and get no subscribers for us under this system, get paid as well as those who endure "the heat and burden of the day," and make the publisher smile as he reads "with my subscription, on this occasion, I take pleasure in adding one for my neighbor;" but then we have good example for this generous treatment, and feel that we have at least a right to expect to say, "thank you" besides, and those who don't send fail to get this. But—well, Sinclair promises to put forth his best efforts on our "chromo," and good reader be patient, and wait, and see.

THE POSTAL LAWS.—There is nothing more to be dreaded than the political grumbler. The wrongs of which he complains are generally unbearable, until he or his party is in power, and then they are beds of down, on which not even bad dreams trouble him. But we really think the postal laws of a great nation like this might be amended, without interfering one cent with its prosperity. In an editor's office, or for the matter of that, the office of any large horticultural establishment, plants are sent for name,

for opinions, and these and other things are sent for all sorts of reasons, but no writing must be inside. They come to us by the dozen, and it is almost impossible to tell till we find the letter, what they are sent for. It is often two or three days before the letter, and the package relating thereto are brought together, and the care and labor this bringing together involves is no mean tax on the busy man's life. If a few lines of explanation were permitted in such package, what a world of trouble it would save. As a postal card only costs one cent and a letter three cents, what does the Government lose by the writing inside the package? When a letter cost a shilling, there might be some objection, but what does it amount to under our modern rates of postage? The suggestion made in our columns, sometime ago, by Mr. E. Hall, at least seems unobjectionable, that a person be allowed to put a three-cent postage stamp in addition to the legal postage on the package, to be taken as a sign that the sender has a letter inside, and the package be allowed to pass, whether the ends be "gummed" or not, without further molestation or detention. What possible objection can there be made to this plan? If there be any objection that we do not see, we should be glad to give place to it.

ROYAL LOVE FOR WILD FLOWERS.—The following from an English paper is only the story of a few wild flowers, and yet it has its thoughtful features which make it well worthy of a place in our columns. It is said that one touch of nature makes all the world of kin, and both prince and peasant may perhaps find their kinship in nature more readily among wild flowers than anywhere else:

"On the 31st of August, Mr. William Cosstick, section of the Eastbourne Cemetery, had the pleasure of presenting a collection of wild flowers to the Princesses of Hesse, and their Royal Highnesses showed their hearty acceptance of the present by sending a messenger to Mr. Cosstick, requesting him to come to High Cliff House and explain the nature of the flowers, and also to plant the *Drosera* amongst the sphag-

num. He also received a special request to collect for H. R. H., the Grand Duchess of Hesse, a bouquet of *Erica tetralix* and *Erica cinerea* to take away with her on leaving Eastbourne. He packed it for her, also the *Drosera* for the Royal children, and the wild flowers to take to Germany, with the tickets attached, with English and Latin names, as mementos of the visit to Eastbourne. Their Royal Highnesses were so much pleased with the *Drosera* that Mr. Cossick has promised to send a packet of seed to their residence in Germany. The Grand Duchess presented him with a group portrait of the Royal family of Hesse."

WINTER GREENERIES AT HOME.—By Rev Dr. Johnson,—New York, published by the Orange Judd Company.—We learn by the preface that Rose and Lily Richmond, Mary Miner, Jenny Weeks, Daisy Burritt, and Miss Flora united in asking Uncle Edward to write an account of his successful window gardening, and that this work is the response. We were rather surprised that Pittsburg ladies should have to ask a man how to grow window flowers, for here in Philadelphia the women beat the men at this pleasant work, and there are not a few good gardeners who often feel a little envious that with all their skill, the women in their windows, have better plants than they, with all their greenhouses and conveniences can produce. However, it seems there are men who can, for all, teach the ladies a little more than they know about these things, and Dr. Johnson is certainly one of them. Window gardening just now, especially, is attracting marked attention, and this beautifully printed and pleasantly chatty book is just timely and very welcome.

The title "greeneries" strikes the ear strangely at first, and one is half disposed to resent it; but after all, "greenhouse" must have sounded just as odd when originally introduced; and it is about as appropriate as window garden, or any other term in use. And then it conveys a better idea of what we can do with a window; for we can have "window green" when we may not have "window flowers," and we have often expressed our wonder in these pages that more attention was not given simply to green leaves and half-hardy things. To us, it is not among the least of the many merits of this little work, that it shows how very much may be made of foliage alone. Perhaps some of the practical directions might bear comment. For

instance, where we are told that it is only necessary to transfer the Lily of the Valley from the garden to pots, to get them to flower well in the Winter time. Roots of the Lily of the Valley, matured in other countries, flower thus easily; but we have known of many attempts to flower American roots this way, and they have never succeeded that we know of. The usual practice is to grow them in pots or boxes one year first. Again we were surprised to read that "in the case of red spider, drowning will be more convenient. Keep the stems submerged for an hour." Some years ago the writer of this imagined they could be drowned, and put half a dozen of *Gardenias* covered with both red spider and mealy bug in a barrel of water, under a spring, for forty-eight hours, but of neither insect could a single dead one be found. Again the "constantly moist atmosphere" recommended to keep down red spider on room plants, is not very easily secured. But practical experience always differs. People will not want to criticise this pretty book from this stand point. It is full of very useful hints that every window gardener may profit by.

THE HOG.—THE VARIETIES TO RAISE, GENERAL MANAGEMENT AND DISEASES.—By Dr. Thomas Pollard, Commissioner of Agriculture of Virginia.—We have received under this name, what seems to be a comprehensive treatment of the subject. In 77 pp., pamphlet form.

PRELIMINARY STUDIES ON THE NORTH AMERICAN PYRALIDÆ.—By A. R. Grote, from the author.—This is a part of the report of a commission that has been of immense service to American science. In this, Mr. Grote gives a full account of the new Zimmerman Pine Pest, *Pinipestis Zimmermanii*, a very destructive insect to the red and white Pines. Besides these natives, it attacks the Scotch and Austrian imported Pines. "The wounds occur on its main stem, usually below the insertion of a branch. On cutting into the bark beneath the exuding pitch, the larva may be found, which measures about eighteen millimetres when full grown. The head is shining Chestnut brown, with black mandibles. The body is livid or blackish green, marked with series of black dots, each giving rise to a single bristle. The prothoracic shield is blackish. The larva has three pair of thoracic or true-jointed feet, and four abdominal or false feet, besides

anal claspers. This larva, eating on the inner side of the bark, and making furrows in the wood, causes the bleeding, which, when the depletion is excessive or continuous, and especially in the case of young trees, has proved fatal." *Pinipestis Zimmermanii* seems to be one of the most destructive of Lepidopterous insects to timber. I have seen a number of young Pine trees killed by it."

THE JOURNAL OF FORESTRY.—A Journal especially devoted to forest culture, and forest interests, was the newest venture in rural literature in London a year ago. The first volume has just been completed, and proves to be a great success. No one seemed to think previously to its appearance that a monthly solely devoted to such a specialty could be made so continually interesting as to hold subscribers for any length of time; but the *Journal of Forestry* in these respects exhibits all the signs of long life and of increasing strength with increasing years.

DR. H. A. SWASEY.—We gave a brief note in our last of the death of this excellent gentleman. We find in *Our Home Journal*, fuller accounts of his decease:

DIED.—At Tangipahoa, La., on Wednesday, September 18, at 9 A. M., of yellow fever, H. A. SWASEY, M. D., aged 54 years; a native of St. Johnsbury, Vermont,—a resident in the South for many years.

We make the above announcement with deep sorrow. It is not easy to replace men like Dr. Swasey, and the void created by his death will be keenly felt outside of the home circle.

Dr. Swasey died at his post of duty. A physician's field of action, in the country, extends over a considerable area. He was in Washington parish, many miles from home, when he became aware of the attack of this fearful disease. He nevertheless visited his patients and administered to their relief, before caring for himself. This delay proved fatal. The fever, at first, yielded to treatment, but later, unfavorable symptoms developed and—we mourn his loss.

During a useful and busy life our friend was connected with the agricultural press. He was for a considerable time editor of *Our Home Journal*. Previously he published a horticultural paper at Yazoo City, Miss., and was on the staff of the *Rural Alabamian*, at Mobile, Ala. Subsequently he took editorial charge of the *Southern Plantation*, at Montgomery, Ala.

After his second marriage, in 1876, he settled

in Tangipahoa and resumed the practice of his profession. His agricultural and horticultural knowledge he did not, however, hide under a bushel but he freely dispensed it for the good of the world at large. Much of Southern agricultural and horticultural knowledge is due to his earnest and unselfish labor.

Dr. Swasey was twice married. Four daughters, by his first marriage, mourn his loss. In 1876 he married Miss Rosaline Harris, sister of our esteemed townsman Otis Harris, Esq. The widow and an only son survive him. *Requiescat in pace.*

Since the above was in type the friends of the late distinguished Southern horticulturist, Dr. Swasey, will have the additional pain of learning that his daughter Ida has also fallen a victim to the yellow fever.

COL. DANIEL DENNETT, one of the best known and most useful horticultural writers in the Southern States, has received a severe blow in the loss of his son by the yellow fever. He remained in charge of the telegraph station at Vicksburg and died at his post.

INSECT POWDER.—Why the flowers of the composite plants *Pyrethrum carneum* and *P. roseum*, when pulverized to form the well-known "Persian Insect Powder," should prove so destructive to insects, while perfectly innocuous to other forms of animal life, has not hitherto been understood. Rother, who has investigated the chemical composition of *P. roseum*, ascribes its active powers to the presence of an acid, or, more properly, of a glycoside, which he terms Persicin. It is a brown non-crystallizable substance, having the odor of honey, and when boiled with hydrochloric acid is converted into sugar and Persiretin. With alkalis it forms a neutral amorphous salt, as well as an acid crystallizable one. Persiretin also behaves like an acid. The plant contains, in addition, an oily resin-like acid, Persicein. No alkaloid was found by Rother. Bellesone, however, obtained from the plant a crystallizable substance which exhibited exceedingly acetic properties. Hager, who has examined the flowers of both *P. carneum* and *P. roseum*, attributes their insecticide effects to the presence of two substances, one of which, a body allied to trimethylamine, is combined with an acid in the flower. This powder as well as the pollen has a peculiarly powerful effect as an irritant. Hager finds that aqueous or alcoholic extracts

of the powdered flowers contain little of these ingredients, and consequently to be of no value as insecticides.—*Scientific American*.

BAHAMA FRUITS.—A large proportion of the area of the Bahama Islands is devoted to the cultivation of fruit, of which Oranges and Pine Apples are the principal, and at the present time the fields in the estates on which the Pine Apples are growing, form a peculiar feature in the landscape. The appearance of the broad expanse of young fruit, with its clusters of delicately tinted but sharp and serrated leaves, rising only a short distance from the ground, and covering the undulating fields, produces a very remarkable effect. In no other branch of agriculture can so curious a picture be produced as in the growth of these Bahama fruits. As many as a million and a half of the fruit has been collected from a single acre at one crop. The appearance of these Pine Apple estates has as little in common with sugar plantations, or paddy fields of the tropics, as with the corn fields or vineries of Europe. In a few weeks these Pine Apples will be making their appearance in the English markets. They are shipped in an unripe state, and mature during the voyage, and hence are not so excellent in quality as the English hot-house fruit, or as if they were properly ripened in the ground. The Pine Apples of New Providence, however, are superior to any other variety, and often attain an enormous size. One, grown in Pembrokeshire, weighing $10\frac{1}{2}$ pounds, and measuring $10\frac{1}{2}$ inches in height, exclusive of the stalk and crown, and twenty-two inches in circumference, was served up at the coronation banquet of George IV., and since then the improved modes of cultivation have greatly increased the size and quality of the fruit. There is an enormous demand for the Bahama Pine Apples both in Europe and America.—*The Colonies and India*.

CATALPA BIGNONIDES, VARIETY SPECIOSA.—The merit of noting the distinction between the two forms of Catalpa appears to be due primarily to Mr. Suel Foster, of Muscatine, Iowa.

TRADE IN FLOWERS AT PARIS.—The trade in flowers and plants assumes extraordinary proportions at Paris. The rents of the stalls in the various flower markets amount to 100,000fr., so that it may be imagined that no small number of Geraniums, Pansies, and pots of Mignonette must be sold before any profit is made. The

market of the Cite comes first on the list, with 40,000fr. of rent; that of the Madeleine, 16,000fr.; that of St. Sulpice, 2,700fr.; and those of the Place Clichy and Place Voltaire, 500fr. The annual commerce in room plants is calculated at more than a million of francs.

THANKS.—The secretaries of the many horticultural societies in the country, which have kindly sent complimentary admission tickets to the editor, will please accept his best thanks.

NURSERY VISITS.—Nurserymen complain that people do not visit their grounds as formerly, but the Norfolk *Daily Ledger* says: "That large numbers make daily calls on the beautiful nursery grounds of Mr. Daniel Barker of that place."

BENJAMIN G. SMITH.—This, and not B. J. Smith, should be the name connected with a recent interesting note on the Dwarf June-Berry from Cambridge, Mass.

THE PLACE FOR THE SUN-DIAL.—Old Mills, the optician of Milwaukee, sold a sun-dial to Pitman, a short time ago, with the assurance that it was a first-rate timekeeper. About a fortnight afterwards Pitman called at the shop and said: "Say, Mills, that sun-dial ain't worth a cent; it's no good as a timepiece anyway." "Did you ever time it by your watch?" "Certainly I did. I've stood close to it often exactly at the even hour, and the blessed thing has never struck the time once." "Impossible! Why you did not expect it to strike the hours, did you? It do'n't strike, of course; it has no works inside." "That's what puzzles me," says Pitman. "If it ain't got no inside, how is it going to go?" "Mr. Pitman, where have you placed that sun-dial—in the garden?" "Garden! My gracious, no! What do I want with a timepiece in the garden? It's hung in the settin'-room agin the wall."

AUSTRALIAN INTERNATIONAL EXHIBITION. Australia is to have an International Exhibition at Melbourne, in 1880. The *Illustrated Australian*, of June 10th, has plans of the buildings, and is besides full of beautiful illustrations of Australian scenery, and representations of Australian enterprises. Any one interested in either Australia or its International Fair, would do well to send for a copy of this number. The price is twenty-five cents, and the address, Melbourne, Australia.

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

PENNSYLVANIA HORTICULTURAL SOCIETY.

—The Annual Exhibition was one of the most successful held for some years. The immense hall was crowded every night, one evening five thousand persons having been present. The critical manner in which everything was examined, showed how well adapted these exhibitions are for educational institutions. The chief attractions were the huge Ferns, Palms, and leaf plants, which, growing in value from year to year, excite the envy as well as the admiration of those whose pockets are slim, and afford an annual treat to the multitude who can here enjoy them. In this particular department the enterprising firm of Hugh, Graham & Co., excelled.

So far as cultural skill is concerned, Mr. Wm. Joyce, gardener to Mrs. M. W. Baldwin, made a decided sensation by his admirable growth of Caladiums. Philadelphia gardeners are celebrated for their growth of these plants, but these out-did them all.

The great missing link in the exhibition was in connection with flowering plants. These have almost wholly disappeared. The only redeeming feature of this kind was furnished by a poor woman, who, with her little son, brought them to the exhibition in their arms. It is true they were only Cockscombs, Geraniums and Balsams, and similar common things; and the Balsam had but three flowers on it, and the plant was less than six inches high; and then the plants were growing in cracked teapots, little paint kegs and old shells. But it was quite a relief to see plants with flowers as well as great Palms and Ferns, and though no doubt some might have thought these fifty little things poor specimens for a great Pennsylvania Horticultural Exhibition, it is a pleasure to know for flowering plants' sake that the "widow's mite" received a special premium.

But there was one exhibitor who deserves great praise for something really attractively new to an exhibition, Mr. E. Sturtevant, of Borden-

town, N. J., who made a display of Water Lilies, *Nymphaea cœrulea*, the light blue; the remarkably brilliant red *N. dentata*; and *N. dentata* Devoniana; and our own sweet white *N. odorata*. This pretty red white and blue combination, floating with their glaucous green leaves in a little fountain made for them, was particularly attractive.

The cut flower department was one of the most brilliant ever made at an exhibition in America. Most of the leading florists in Philadelphia participated. It is questionable how far into good taste we may go with crosses, doves, crowns, pillows, ships, bells, and so on. Yet the taste for cut flowers is one to be commended, and the arrangements must take some form. All we can say is that if the forms are to be tolerated it was hard to have better work done than was exhibited here. One might wish that some new flowers could be introduced sometimes. The same white Bouvardias, white Carnations, white Jasmynes, forever and ever, with the one everlasting "*Smilax*" or *Myrsiphyllum* is just a trifle dull. Mr. Dreer deserves some credit for the plentiful use of the common Maiden Hair Fern in his Cut Flower work. It was a good change from the prevailing green.

The Fruits and Vegetables were, on the whole, of the usual good quality seen at exhibitions, but little was offered to mark special progress in any particular direction. Mr. Ricketts made a fine exhibition of his seedling Grapes, but these have been fully noticed in our paper on former occasions.

MICHIGAN STATE POMOLOGICAL SOCIETY.—A Detroit, Mich. correspondent, under date of September 21st, says: "The Annual Fair of the Michigan State Pomological Society closed here last evening. It was held in connection with that of the State Agricultural Society. Our awards of premiums in pomology and floriculture amount to \$700. The exhibit of fruits was very fine in all the departments. The Peaches, Plums and Pears were especially noticeable for the very large size and great beauty of many of the specimens."

THE MARYLAND HORTICULTURAL SOCIETY. By the full report of the proceedings in the *American Farmer* it appears that the Annual Exhibition was an eminently successful affair. Most of the articles exhibited seem to have been Ferns, Palms, or variegated leaf plants; the only flowering plants among them appearing to be China Asters and Orchids from our excellent correspondent, Captain Snow. In cut flowers, and designs formed of them, the competition seems to have been heavy. Among the fruits there were eighteen different exhibitors.

NURSERYMEN AND HORTICULTURAL EXHIBITIONS.—A prominent nurseryman hands us the following for publication, which was sent to him by an energetic secretary of a leading agricultural association, who deserves every success for his endeavors to make the exhibition of his society attractive and every way successful. The object of handing it for publication is to draw attention to the fact that a large number of leading nurserymen and florists seem to take no part in these exhibitions, and, therefore, it is worth inquiring why they do not do so. The letter suggests that exhibitions ought to be good advertising mediums for really meritorious articles, and yet it is a well known fact that these advertising facilities are rejected, even by those who are known as liberal advertisers, and who spend hundreds of dollars in hard cash for their advertisements. It is to the interest of the public who attend exhibitions to have the best things there to look at, and it is to the pecuniary interest of the exhibition to have them. It therefore becomes a very important inquiry why growers take so little interest. And we shall be very glad to have the experience and views of others on this subject:

"The exhibition promises to be the finest, and the turnout the largest that New Jersey has ever witnessed. Outside of the premiums, a schedule of which I send you, you will observe that it will be a grand opportunity to advertise your business. No charge will be made for space, and every attention given your exhibit to show it to the best advantage. It is the first exhibition that our society has held, and I am desirous of making our floral display a creditable one. A number of our members have promised exhibits of considerable extent, nearly all of which will be entered 'not for competition,' thereby swelling the exhibition without carrying off the premiums. Should you not feel disposed to

send an exhibit of both plants and flowers, we hope that you will at least send a floral piece. Send something. It will pay you and be doing a favor to our society."

HORTICULTURAL EXHIBITION IN ENGLAND.—*The Gardener's Magazine* says:

"Horticultural Exhibitions multiply and prosper in every part of the British Isles. The regions in which they occur but rarely and remotely do not usually lack the needful enthusiasm so much as the neeful material, for in mountainous districts where gardens are few, the people travel far to enjoy the healthy excitement of a flower show. But in the fat lands, and such as may be termed *par excellence* horticultural districts, the exhibitions interest all classes and create an immense amount of work for the local press, the centres of attraction being near together, and the shows following each other in rapid succession all the summer long. It is an agreeable testimony in favor of their general acceptance and usefulness that it is a quite rare event for the owners of gardens to raise objections to the exhibitions of such subjects as they themselves may desire to place in competition; or, that their gardeners with a view to honor and grist combined, may select to represent both their employers liberality and their own skill. Occasionally, perhaps, the objection to permit the gardeners to exhibit is the expression of combined indifference and selfishness and exclusiveness; but not unseldom it represents sheer prudence, for it has sometimes happened that the desire to shine at exhibitions has made gardeners careless as to the general keeping and productiveness of the garden—a matter always to be regretted. But all things considered, the good so far and so emphatically exceeds the evil, that the favor in which horticultural exhibitions everywhere enjoy, is fully accounted for. They provide a delightful and instructive recreation for all classes; they spread a taste for horticultural pursuits and encourage a spirit of emulation amongst both amateurs and gardeners. Moreover, they bring to the test of critical comparison the plants, fruits, and flowers that are most valued, as well as the methods that are followed in their production. To such as are willing to learn, an exhibition is as good a school as can be desired, for it consists wholly of object lessons and compels the learner to the Pestalozzian process of analyzing facts and appealing to the moral consciousness for self-made commentaries upon them."



ANDROMEDA ARBOREA

THE
GARDENER'S MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

Vol. XX.

DECEMBER, 1878.

Number 240.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

We are again at the end of another year of our labor, glad to feel that they have been of some use in the spread of horticultural taste and knowledge. We are particularly glad to feel that our "hints" have not been thrown away. We endeavor to make this an especial feature of our magazine. Here we admit nothing but what has been submitted to the severe test of practice and experience. In other departments we strive to encourage thought, and allow latitude to speculations; but in this, only those things are suggested that have been tried in the balance and not found wanting.

We want to insist just now, in view of what we have said the past year in reference to the finer kinds of evergreens, on what we have frequently urged—the importance of planting places very thickly at first, in order both to produce an immediate effect, and also because the shelter which one another affords, makes the trees grow with greater health and vigor, than when exposed singly to the force of wind and sun. At this season, no better employment can be found than in thinning out these thick planted places. It will of course require much judg-

ment; but one fond of trees, and the effects which they produce, will not be much at a loss. Sometimes it is hard to bring oneself to cut down a tree which one has watched grow for so many years; but it often must be done if we would preserve the symmetry and beauty of our places. When there is any question as to the proper tree to be taken away, the size of the place may help one to decide. A tree which will in time occupy much space can be more easily spared from a small place than one which will never transgress a limited space. Indeed, except for the purpose of rapid growth to nurse more valued trees, large growing things should not be tolerated in small places. The green grass, which is the charm of all gardens, soon departs when large trees are about.

Of course, this talk about thinning out, brings us to another great Winter employment, that of pruning. There is no very great amount of science required for this, and yet some judgment is necessary. This is often done with little more reason than a boy has for whittling a chip—merely to have something to do. For notwithstanding the many papers that have been written "on the philosophy of pruning," the naked question, "What is the best time to prune trees?" is one with which the gardener is continually

bored. The keen-edged gardeners give the cutting reply, "any time when your knife is sharp," but the more good natured say: "It depends on what you want to cut for." The street cutter "wants to keep the tree head low," and cuts down to make them branch lower; cutting in Winter does not have this effect, so that unless one has some other object to combine with it, such as to clean the tree of bark scales or the larva of other insects, or the giving of employment to some half-starved tree carpenter, the work might as well be left undone. If you want a branch to push strongly at the point where you cut a part away, prune in Winter. If your tree has branches crossing each other, or has half dead branches, or anything tending to spoil the form or symmetry of your tree, prune in Winter; but as a rule the less pruning is done the healthier will be your trees, for it may be accepted as a rule in gardening, that all pruning, whether in Winter or Summer, is a blow struck at the vitality of the plant.

Many kinds of trees that do not seem to thrive well, will be greatly improved next year by having a surface dressing of manure or rich soil thrown about them. Evergreens are no exception. A singular notion used to prevail, that manure of any kind was injurious to evergreens, probably through noticing that they were usually found in poor, barren soil. Our best American coniferæ growers, however, have long practiced manuring them and with the best results. Guano has been found particularly beneficial to the Spruce family, and will probably be found as good for the whole family of evergreens.

It would be well, at this season of leisure, to examine and decide on the course of improvements for the ensuing year.

It does not, in very many cases, require much time or money so to alter the appearance of a place as to make it bear a very different look to what it did in the past year. A new clump of cheap shrubbery may be planted, or an old one taken away to admit a new view that may have grown up since the original planting. A strip of grass may be laid down on what was once bare gravel. Here a small rockery may be put together; there a nest of roots thrown up, and ferns and trailing plants freely interspersed between them. In this corner you may place a stump, and entice Ivy or some climbing vines to grow over it—a rustic arbor may be formed in some inviting nook, and in another shade-enticing spot, a rustic chair or bench be fixed. Even the outlines

of the flower-beds may be changed, or of the walks themselves, or even the contour of the surface in some instances, and all, in many cases, at the expense of a very small expenditure of time and money.

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COMMUNICATIONS.

SELACINELLA JAPONICA.

BY W. FALCONER, CAMBRIDGE BOTANIC GARDEN, MASS.

The plant figured and described in the September MONTHLY, page 262, under the name of *S. Japonica*, is *S. involvens*. And the kind usually grown and distributed under the name of *S. involvens*, is *S. caulescens*, variety *Japonica*. This transposition of names, is not, as many may suppose, the result of a recent re-naming of the genus; botanically there has been no change in the nomenclature of these two kinds. Apart from the several botanical works and herbariums that testify to this effect, I may mention "the cultivated *Selaginellas*," by J. G. Baker, of Kew, in the *Gardener's Chronicle* of 1867, page 1241. As regards its hardihood as an out-door plant for Northern gardens, I may say, that in May 1877, Mr Harris, gardener to H. H. Hunnewell, Esq., at Wellesley, Mass., showed me some specimens of it that were growing in a shady place in the rockery there, and where they had survived the previous Winter. But they did not look well, and Mr. H. candidly admitted that it would be far better to Winter them in-doors or in frames. I never could see the utility in striving with unreliably hardy plants, to keep them alive out of doors. The amount of trouble in covering and uncovering might be reasonably submitted to, but when the plant arises in Spring a miserable ghost instead of a healthy specimen, and which will take all the succeeding Summer to attain to even its last year's strength, the time and trouble expended in caring for it are lost, and we find mortification in place of pleasure. If plants be unreliably hardy, and of convenient size, I recommend that they be lifted in the Fall, wintered in cold pits or frames, and again transplanted out of doors in Spring; in which case we have but little trouble or anxiety, and absolute certainty. Of course, in the case of Roses, and other plants requiring Winter mulching or covering, and which will submit to the same with impunity and arise in Spring with more than

their last year's vigor, I would advise to treat them as we used to.

THE JAPAN QUINCE.

BY GEN. W. H. NOBLE, BRIDGEPORT, CONN.

The very name of the Japan Quince summons up the hopes of spring time in the fiery glow of the oldscarlet. How its bloom warms and cheers and brightens the opening of the floral year. In its radiance we forget its many lovely varieties of both lighter, darker and richer tints; and more are coming. It is a parentage whose offspring show a wonderfully brilliant and varied bloom.

Out of curiosity, just before the war, I planted a mixed lot of its seeds, from the old scarlet and pink, and the cherry-colored umbellatum. Their seedlings yielded six or seven different tints of bloom, all diverse from their parents, and unlike each other. One of them, of a dark crimson velvet tint, wears the finest tinge of bloom I ever saw. But, though growing in deep, rich soil, they took thirteen years to show the first flower. "Aye! there's the rub." Such a tardy reward to trial, disheartens us eager people. We tire of "patient waiting," and seek novelty in that which absorbs less "hope deferred." I tried to hurry up their show by grafting my seedlings on the common Angiers Quince, but they would not mate. Perhaps some skilled propagator might have done better. But the stocks and scions, like other uncongenial natures, rebelled against the wedlock.

Is the Japan Quince a true *Cydonia*? If so, it don't take very kindly to its kindred. But now Mr. Strong has a new seedling of great vigor, on which he hopes the Pear may make a lusty growth and fruitage. If the Pear joys in the mating, surely we may look therein for a quicker growth and bloom of our Japan seedlings. Verily, "it's a consummation devoutly to be wished." It is a very pardonable impatience which longs in one's own day and generation to set eyes on blossoms bursting from seedlings of one's own planting and nurture.

I hope Mr. Strong's new Japan stock will follow up its promise and give us Pears vying with the high quality which the Angiers Quince adds to their fruitage. There seems hardly a doubt that the new stock will prove so congenial to the Japan seedlings that thereon we may expect a more rapid growth and bloom. By the way,

will Mr. Strong tell us whether this new stock makes fibrous roots? Of these the Japanese Quince has heretofore sadly lacked. Freedom from its suckering habit will help the welcome of the new stock. But perhaps, as in other plants, the growth of a tree instead of a bush above its roots will check their wide range and abridge the torment of the suckers. I hope all who have the old Japan plants will make trial of its seedlings. With skill and care a fine future is before it.

I look for this Quince to yet charm one's borders with as rich a range of tints and styles of flower as have extended to the *Gladiolus* tribe, from its old cornflag and pinkish-white varieties. This Quince has surely, in the pink and scarlet, and cherry, and the yellow tints of the olden varieties, a brighter hope of future rich and varied tints and forms of bloom than was warranted to trial out of the very tame colors of those old *Gladioli*.

The fruit too of the Japan Quince seems to promise present usefulness, and hope of betterment. Some years since a lady near by tried some of the umbellatums in the usual forms in which the common Quince is made into a sweetmeat. Both she, and friends who tasted her preserves, declared them excellent. If this be true the Japan Quince is likely to become "useful as well as ornamental." Why not? If the bitter Orange of Florida can be sent to us as a pleasant marmalade, surely this Quince, which is quite as fragrant and palatable, may in many forms add to our household dainties. There are more uses for things that grow than are dreamed of in the philosophy of most mortals. If "there is nothing new under the sun," there are new uses found for the old every day.

NOTES ON THE OCTOBER MONTHLY.

BY S. B. PARSONS.

Hydrangea paniculata.—J. J. S., is right in his estimate of this plant. Its rapid growth, immense trusses of flowers changing from green to white and then to pink, and its autumnal blooming gives it a high rank. The first plant in this country was received in Flushing, direct from Japan in 1862, and has proved one of the best things introduced from that country. I have trained a single stem of it six feet high, and the flowers are now pendent from it in graceful curves. I have a fancy that my *Hydrangea* tree will one day startle beholders.

Climbing Hydrangea.—J. J. S., asks after this plant. It promises to be a gem. Its leaves are beautiful, and its flowers are said to bloom in masses, so that the side of a house looks like a mass of snow-balls. It has true climbing branches which throw out little rootlets, fastening to any thing as do those of *Ampelopsis Veitchii*. It is very slow of propagation but we hope soon to be able to send it out.

Purple Beech for Hedges.—"B. B., in *Garden*" thinks truly that hedges of this plant would be beautiful. Hedges of common Beech are well known in Europe, and there is no reason why the Purple Beech should not do as well. The effect would certainly be striking. He advises to take young seedlings from under trees and says that "they will invariably keep the same color as the old tree." Here he mistakes. The true rosy purple Beech is a variety, and no variety can be relied upon to produce the same from seed. There may be some purple ones but many will be green. Grafted plants only can be relied upon, and these of small size can be bought at reasonable prices. Hedges of various colors will yet be a feature in landscape effect. *Retinospora aurea* and Hemlock in stretches of one hundred feet each, would contrast finely. Purple and common Barberry, purple and common Beeches and many other contrasting colors would all find admirers and would be to ordinary trees as the groundwork of a picture to the picture itself.

THE CLIMBING HYDRANGEA.

BY EDWIN LONSDALE, GERMANTOWN.

In reply to the remark of J. J. S., (see October MONTHLY, page 292) that "There has been a story verbally circulated, that somebody was about to bring out a real novelty—a *Hydrangea* that clings to the wall, and has grand panicles," &c.; let me inform him that the apparent myth is a reality, and in the market, it being offered last Spring by Peter Henderson, under the name of *Schizophragma Hydrangeoides*, who introduces and describes it as follows:

"We believe we are the first to offer this valuable climbing plant, either here or in Europe. Mr. Thos. Hogg, to whom we are so much indebted for many other Japan plants, describes it as clinging to trees to the height of fifty feet, producing corymbs of white flowers of the size of ordinary *Hydrangeas*. It clings exactly like Ivy, and one can imagine the effect of a wall or a tree so

covered, when in full bloom. Like all Japan plants of that character, it no doubt, will prove entirely hardy. Our plants up to this date, December 25th, have withstood the cold, apparently as well as our hardiest shrubs."

It remains now for Mr. H. to say whether it survived the whole winter.

GARDENS AND GARDENING IN AUSTIN, TEXAS.

BY P. H. O.

Situated on the banks of the Colorado, and rising gradually from the narrow level strip of land on the river, climbing up the hills and nestled in the valleys between, the city of Austin presents a picturesque appearance, especially from a hill on the eastern part of the city called Robinson's hill. At this point as well as on any other, only part of the city can be seen. The view from this point is closed towards the west and north-west by hills and mountains rising about four miles distant, several hundred feet above the Colorado. The mountains and hills and surrounding country are of limestone formation, and where the surface is not too rugged the soil is rich and black; but on the spurs jutting out from the upland towards the Colorado we find gravel and sand overlying the limestone formation, a peculiar feature, which was probably produced by a flood carrying hither the sand and gravel of the Llano and other tributaries of the Colorado, where granite and sandstone formation prevail. The climate is a mild one, as may be expected under latitude 30° north, but nevertheless it must not be expected that we have a perpetual Summer; on the contrary we have sometimes severe frost; snow of course we seldom have and never long on the ground, but instead of it we have cold and dry north winds, so-called northers, blowing from the middle of December during January up to March, and sometimes as late as April, and in such cases much damage is done to vegetation and to gardening especially. Alternating with this we have mild south-west and south winds, and occasionally a warm south-east wind from the Gulf of Mexico which brings us mist and drizzling rain, and makes breathing difficult, as if it were blowing over a steaming cauldron. During a norther, the thermometer ranges between 20° and 30° Fahrenheit, but sometimes it sinks much lower, and has been observed down at 11° which makes 21° below the freezing point.

Another feature in the climate of central and western Texas, is its dryness, when compared with the eastern part, which is favorable to health, but not so to gardening. This dryness is, in my opinion, produced by the configuration of the coast of Texas and Mexico, and the winds that prevail here during Summer, namely, south winds.

By reference to a map of Texas we find that from Corpus Christi, on the Gulf of Mexico, the coast runs in a southern direction towards Tampico; at about that point it turns southeast, and as Austin is nearly under the same meridian with Corpus Christi, it is apparent that west of this line the Summer winds come over the dry, sandy plains of southern Texas and northern Mexico void of moisture: while east of this line the same south winds come moisture laden from the Gulf. Evidently the confinement of the growth of Pines east of this line was caused by it, for the westernmost Pinery of Texas we find in Bastrop county, about thirty miles southeast of Austin.

Such an uneven surface as the city of Austin presents, is obviously not favorable in all its parts to gardening; but some of its citizens have, by terracing their lots and hauling in of good soil, made beautiful homes of places that were intended by nature as stone quarries rather than as gardens. But the gardens need irrigation, such as the city of San Antonio has, where a stream of water can be led into nearly every garden. We have water works, but the citizens who take the water are only permitted, if they pay for it extra, to sprinkle their gardens in the morning and evening, which, in my opinion, is

doubtful whether it benefits the plants so much as it costs.

With conditions as stated above, no man must expect to find groves of Oranges; neither can the now so popular *Eucalyptus globulus* be grown out doors during winter. And in order to give the readers of the *GARDENER'S MONTHLY* a correct view of what may and what cannot be done in regard to ornamental gardening, I will try to give an unbiased and unprejudiced account of the leading features, not, however, pretending to exhaust the subject.

VERBENA VENOSA.

BY DR. G. RHIND, CANANDAIGUA, N. Y.

This valuable acquisition does not resemble the common *Verbena* to any great extent. It grows about eighteen inches high, branches freely, and has dark green serrated foliage about six inches high. It is an annual, requires to be sown in January, and kept very moist until the seeds germinate; afterwards, the treatment of half-hardy annuals suits it.

It is really astonishing the quantity of flowers that is produced. From the middle of June till now, the beds planted with it, have been one mass of large purple flowers. I know of no other perpetual purple flowering plant. It does not mildew, and is the proper size to contrast with most *Geraniums*. When it becomes known it will be indispensable.

I send you a few flowers of it, Mr. Editor, for your inspection.

[We are glad to have attention called to this very beautiful, hardy, herbaceous plant.—ED. G. M.]

GREEN HOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

The plants brought into the house in the Fall will perhaps begin to show signs of suffering soon, for insects, over-watering, and sulphurous gases soon begin to tell on the health of the plants. For insects, continual watchfulness, with a sponge and soapy water is one of the best pre-

ventatives; and to have plants rather underpotted is a good security against over-watering. By this we mean that the pot should be rather below than above the wants of the plants. As for sulphurous gases from heaters or burners, there is no remedy but to see that all is tight. People talk of dry air being injurious to plants, when they really mean impure air. Air is seldom too dry.

It is a pleasure to note that window gardening is growing in favor much more than many have an idea of. In a recent journey of some five thousand miles through our country, it was surprising how much of this kind of gardening was evident, over a few years ago. Pittsburg, Columbus, Cincinnati, St. Louis, Kansas City and Denver were generally gay with window flowers. Here, in Philadelphia, the number of people who have flowers about their houses is wonderfully large to what it was over a half dozen years ago. Especially is this true of hotels and other public places. During the last annual exhibition of the Pennsylvania Horticultural Society, quite a number of persons went into the Hotel Lafayette, supposing from the large number of beautiful pot flowers about the hall-ways and windows it was the great horticultural exhibition. It is wise especially for hotels to pay attention to house gardening. Many people will travel in Summer who love country seats where they can have gardens and flowers, and nothing is more calculated to make these travelers feel at home than to have nice gardens and flowers for them.

COMMUNICATIONS.

ON VARIOUS SPECIES OF FICUS.

BY MRS. S. E. BYERS, HOUSTON, TEXAS.

Ficus Parcelli, *F. nitida*, *F. Cooperi*. Each of the above fruited with me for the seasons of '77, '78; the Fig of the Cooperi was about an inch and a quarter in diameter of an orange red color. *Parcelli* was dark purple, small; *nitida*, green. *Elastica* had some fruit, but without noticing them I cut off the branches to propagate. They require here about the same protection as *Geraniums* in Winter.

FRUITING OF FICUS PARCELLI.

BY W. FALCONER, CAMBRIDGE BOTANICAL GARDEN, MASS.

"F. B.," page 305, October MONTHLY, asks if the fruiting of this plant is uncommon. No. Even plants in four to six inch pots fruit freely. They do so here, and I have seen plants in fruit at several other places. The fruits too are quite pretty, being beautifully variegated, and as they are about to ripen suffused with a warm rosy color.

ARCHBISHOP WOOD AND GUILLON MANGELLEON GERANIUMS.

BY MANSFIELD MILTON, CLEVELAND, OHIO.

In the October number of the MONTHLY, G. J. B., says "these two *Geraniums* are alike in habit, foliage, petiole, truss and color." I think he has got only one of the varieties; it may be he has got one of them under both names, as they are sufficiently distinct not to be mistaken the one for the other, and distinct enough to be grown under their separate name, although you recommend adopting one name for both kinds. Were I to order *Guillon Mangalleon* from Mr. Meehan, or any other nurseryman and get *Archbishop Wood*, I would undoubtedly consider I had got quite a different variety, both in habit and color of the flowers. I shall give descriptions of both kinds taken from plants growing under the same treatment and in the same house, hoping they may assist G. J. B., in knowing which of them he has got, for I do not think he has them both.

Guillon Mangelleon: Stem partially erect; joints showing prominent nodes and leaf; scars very large; leaves medium size, flat, not deeply indented and faintly zoned; flower trusses medium size; individual flowers large on long foot-stalks; foot-stalks of a deep chestnut hue; upper petals of flower deep scarlet; lower petals rosy scarlet with a slight hue of purple invading the center.

Archbishop Wood, habit compact, almost dwarf; branching, and of very free growth, covering a good space; nodes and leaf-scars not so prominent as in *G. M.*; leaves above medium size, not flat; serration and lobes very prominent, deep green and very faintly zoned; flowers large; foot stalks not colored or very slightly colored; upper petals rosy scarlet; lower petals of a decided purple shade, which invades the whole flower.

SEEDLING ABUTILONS AND CEREUS CRANDIFLORA.

BY J. J. U.

In the Summer of 1877, I planted out in the open air, a single plant of *Abutilon* *Boule de Neige* at least fifty yards from another *Abutilon*. At the time of taking up the plant in the Fall, I noticed a few seed pods well filled on the *Boule de Neige*; these were saved and planted. From the first they were remarkably robust, and when planted out this last Spring grew from three to five feet in height, and were well branched, or "stocky," as florists say. There were about

fifty plants, and when they blossomed, what a sight! Of the fifty plants, each bore a different colored flower, varying from a deep reddish yellow to a fine delicate pink. What would have caused the variation? Were they crossed with *Abutilon Thompsoni*? And if so, why such a variety?

Last year I wrote you of a *Cereus grandiflora* keeping its flowers expanded in the day time, and asked if it were not due to the low temperature. By mismanagement the same plant was kept too wet last Winter, and its flower buds did not expand until in October. The temperature of the house was about sixty, (we had no fire,) and the flowers remained open until the sun's rays heated the interior, and they closed at ten o'clock, A. M.

CULTIVATION OF THE CHINESE PRIM-ROSE.

BY MR. EDWIN LONSDALE.

(Before the Germantown Horticultural Society.)

Since the introduction of the Chinese Primrose, nearly sixty years ago, it has been vastly improved through the patience and perseverance of the florist, gardener and amateur. When it was first introduced, its flowers were not larger than a five cent piece, and generally of a poor shade of lilac in color, but now we have flowers larger than a trade dollar, with the edges elegantly fringed, and in color varying from pure white to the most brilliant crimson. No matter whether it is seen in the conservatories of the wealthy or the windows of the poor, it is always a source of pleasure, being in the Winter what the Geranium is in Summer-time—everybody's plant.

It is as a window plant that I wish particularly to direct attention. I knew of a plant that was in the same window three years, Winter and Summer, without re-potting, and it never was without flowers and always wore a healthy green appearance; the only attention it received, besides watering when necessary, was an occasional top-dressing with well decomposed cow manure, reduced to a powder. I mention this to show its adaptability for the purpose for which it is recommended, not as a practice to be followed altogether especially in this climate, where window gardening in Summer is unpopular, because impracticable, and also to show that it succeeds well under ordinary treatment.

There is no plant so grateful for a little extra attention as the Chinese Primrose. Being a

plant with fine roots it must have a light soil. I find a good mixture for them to grow in is half leaf mould, or soil from the woods, and the other half rich sandy loam. I do not wish to confuse by going into details, but will simply say let the soil be light, rich and porous.

It is hardly worth while for those indulging in window gardening to trouble themselves with the details of raising plants from seed, for good seed is expensive, and, being delicate, often fails to germinate in the hands of the inexperienced; but to whoever has a greenhouse or a hot-bed, the raising of their own plants from seed will be found both interesting and instructive.

For the benefit of those wishing to experiment in this line, I will briefly say, take light soil similar to that which is recommended for the plants to grow in, and fill a six-inch pot to within an inch of the top, or what is perhaps better, a box three or four inches deep and a foot or so square, as a box retains moisture longer than a pot; and this is one of the secrets of raising young plants from seed, for they are apt to perish if subjected to too frequent watering until the little plants have gained some strength. After the soil is pressed down to an even surface give it a thorough watering with a fine sprinkler, then allow it to drain half an hour or so, when it will be ready for the seed, which should be thinly and evenly sown, taking care to keep it more in the center than at the sides of the box, then press the seed gently into the soil; some cultivators do not cover the seed at all, but I find a slight sprinkling a benefit, as the little roots take to the soil better. If the seed is sown in the Spring, a shelf near the glass at the warmest end of the house is the best place for the box, which should be shaded from the sun by means of a piece of paper occasionally sprinkled with water; and when the sowing of the seed is deferred until the Summer months a piece of board laid on the box will check evaporation, and, as darkness favors root action, it will facilitate germination, and a cool place, say a frame facing the north will be found the best place during the hot weather; as soon as the seed shows signs of germination a little air and light should be admitted by degrees so as to strengthen the plants by favoring leaf development.

If the seed has been sown as directed, that is thinly, and the surface of the soil has been stirred occasionally with a sharp-pointed stick, the plants may remain in the seed box until they

are large enough to be transferred to two and a half inch pots, or three or four plants in a three-inch pot; after potting, care must be taken that the little plants are not allowed to wilt as they are very sensitive in this respect. A piece of paper placed over them will be all that is necessary to protect them until they have started young roots; indeed at all stages of growth the *Primula* must be carefully guarded from strong sunshine. During the hot summer months a cold frame is the best place for them, especially if it be within the shade of a building or a tall spreading tree—not beneath its branches, for the drip might do serious injury to the delicate roots of this plant. During rain they should be covered by sash, but at no other time, giving them the full benefit of the light and air.

If a position for the frame cannot be had as recommended, they may be shaded by screens made of plastering lath, nailed about an inch apart on a frame the size of the sash; this will admit air and light sufficient during the hottest part of the day. At all times when the sun is not shining directly on them they must be left entirely uncovered, excepting as before mentioned, when it rains.

At one time it was recommended that the seed of the Chinese Primrose should be sown in this climate in August or September, but we find now that if the sowing of the seed is deferred until so late we cannot get the plants in flower until sometime after Christmas. If there is any time of the year when flowers are more welcome than at another, it is at the gay and festive Christmas time when nature slumbers and humanity is on the alert to secure anything and everything to make home cheerful.

This plant is something more than a cut flower, and not being overlarge it may be advantageously used in all decorations where flowers and plants have a place, as it is infinitely more effective under artificial light than it is in the day-time.

To get *Primulas* in flower by October the seed should be sown in February. Let the strongest plants be selected and encouraged, but by all means avoid over-potting. I saw, a short time ago, a fine strain of several hundred plants completely ruined through over-potting and injudicious watering. In large establishments it is of course necessary to make several sowings of seeds at intervals of a month or six weeks apart until August, but for a small greenhouse and cultivation generally, one sowing will be sufficient. The plants may be brought on in batches

by encouraging the strongest plants, as before stated, and retarding the smaller ones.

This *Primula* is not at all a free seeding plant, the best way I have found to deal with them is to prepare a box of soil as before recommended and set the plants, the seed of which we wish to secure on the box; the seed as it falls, if the soil is kept at the right degree of moisture, will most of it grow, and the plants may be treated in the way as before advised.

In conclusion let me say, to be successful with the Chinese Primrose, avoid extremes of all kinds, give water when necessary—not every day or every other day, but twice a day if the plant is dry, and not for a week if it is moist.

NERTERA DEPRESSA—Banks.

BY MR. A. VEITCH, NEW HAVEN, CONN.

It is satisfactory to know that some interest is now taken in this pretty little plant, for, although long known to botanists, it is only of late years, so far as I know, that attention has been bestowed upon its cultivation.

G. J. B. is right in supposing it to be indigenous to some cool humid climate, as it is found in the alpine districts of South America, at an elevation of from 8000 to 10,000 feet, associated with dwarf *Acaenas*, *Hydrocotyles*, *Alchemillas*, &c., and with these forms a very thick and verdant turf in moist situations. It belongs to the extensive family of *Cinchonaceae*, and is, of course, nearly related to our beautiful *Mitchella repens*, *Oldenlandias* and *Houstonias*, and is, therefore, fitted to form agreeable companionship with these in an alpine collection.

It is of the easiest culture, and perhaps the best method is to set out the plants in prepared earth, in a frame, about the end of May, with the back of the frame to the south, so as to secure the greatest amount of shade, and if this does not suffice, shaded sashes might be placed over them, resting upon pieces of scantling laid on the frame crossways. The sashes need only be used in clear sunshine, and however the weather may be, they should be removed every night, so as to give the plants the full benefit of fresh air, in which they delight. They should be kept constantly moist, and sprinkling over head several times a day in hot dry weather will do them much good. This method I have followed for the past season with the best possible results. The plants when set out were small; some of them are now in nine-inch pans, and

growing finely in a cool greenhouse, where they get plenty of light and air. In this situation they will remain during the Winter, and towards Spring we hope to see them in flower, and in due time studded with their elegant amber-colored berries.

AMARYLLIDACEÆ.

BY W. C. L. DREW, ELDORADO, CAL.

There are no more popular plants with the florist or amateur than the very extensive and numerous family of Amaryllids. All the varieties of the genera are plants of royal bloom, and unsurpassable richness. It is a singular fact that all known varieties are worthy of cultivation in any collection, however choice.

By new introductions, and new hybrids, as the result of foreign skill, the now large list is being constantly increased and improved. The finest of the introductions are those from the tropics, but the genera is represented by beautiful specimens in all parts of the known world. Some of the Amaryllids require stove culture, others succeed best in the greenhouse, while many varieties make fine border plants.

The order Amaryllidaceæ, as now constituted, comprises Amaryllis proper, Brunsvigia, Buphonia, Agave, Crinum, Clidanthus, Coburgia, Clivia, Cyrtanthus, Habranthus, Galanthus, Lycoris, Gastronema, Doryanthes, Hippeastrum, Pancratium, Nerine, Phycella, Sternbergia, Pyrolirion, Haylockia, Sprekelia, Zephranthes, Strumaria, Vallota, Imatophyllum, Ixilirion, Leucojum and Narcissus.

In this article I will merely give a passing notice to the hothouse varieties, desiring to speak more prominently of Summer blooming and border varieties.

Those varieties which require hot-house culture, should be removed from the pots, and the bulbs placed in a warm place on the shelf until they show signs of growth in the Spring. The pots for these varieties should be well drained and filled with a compost of equal portions of peat, clean sand and rich, turfy loam. After the bulbs are planted and made a fair growth in the Spring, they should be well supplied with water as they grow.

The greenhouse species must also be removed from the pots in the Fall and dried, in the Spring. Pot in the same way as for hothouse species. In potting Amaryllids, the neck of the bulb for one-half inch or more should be left above the

surface of the soil, otherwise they will fail to flower.

The *Hippeastrum* constitute by far the larger section of the stove species. The original introductions were from South America and the Cape. The hybrid varieties constitute by far the greater part in cultivation now, the original introductions being very scarce.

The various superb *Crinum*, *Agave*, *Clivia*, and *Coburgia* are also hothouse species. Of those thriving best in the greenhouse we would mention the *Imatophyllum*, *Brunsvigia*, *Haylockia*, *Pentlandia* and *Pancratium*.

It will be observed that several of the genera are classed among Holland bulbs by dealers, as the *Galanthus* or *Snowdrop*, *Leucojum* or *Snowflake*, and *Narcissus*, in their several varieties.

We will now consider those varieties which are known as Summer blooming Amaryllis. Many who are familiar with the regal Amaryllis family, suppose they are too tender to be successfully grown by any but experienced florists; this is a false idea, as a number of the species do not require half the care devoted by enthusiastic amateurs on much less worthy subjects. Those of peculiar merit for Summer flowering, are the *Vallota*, *Amaryllis formosissima*, *Belladonna*, *Johnsonii*, *Longiflora*, *Vittata* and the *Zephranthes*.

Vallota purpurea is a late Summer or Autumn bloomer, with very rich, handsome flowers; unlike others of the Amaryllidaceæ, the bulbs must never be suffered to dry off. It requires to be kept growing Winter and summer, and watered at all seasons. The flowers, which are produced freely from August to October, are of a very brilliant scarlet with a velvety lustre, and last for many days in perfection. When the ground becomes warm in the Spring, transplant the bulb into a bed of rich, light loam; in the Fall, before frost, take it up carefully and pot, when it must be removed to the house, where, if kept rather warm and well watered it will frequently bloom again during the Winter. Treated in this way a good bulb will flower several times during the year.

Amaryllis formosissima is one of the most beautiful in cultivation; it is frequently sold as *Jacoea Lily*, and known according to some botanical authorities as *Sprekelia formosissima*. It is very hardy and of easy culture. It must be planted in the open border as soon as the ground becomes warm in the Spring, succeeding best in a rich, sandy soil. As soon as cold weather appears,

take up the bulb and place in a warm place in a box of saw dust. In planting, one-third of the bulb must be left above the surface of the soil. The flowers are of a very rich crimson color, they are very large and borne on long foot-stalks.

A. Belladonna is one of the oldest and most popular of the Amaryllis in cultivation; it is a native of both continents, being found in Brazil and at Cape Good Hope, although the first introduction into English gardens was from Portugal in 1720, A. D. Unlike the previous variety, it is very impatient of removal, and should be kept growing constantly in a pot, but should receive no water from November until April. In planting this variety, put at least two inches of drainage in the bottom of a seven-inch pot, then fill in about two inches of rich sandy loam, then taking the neck of the bulb in the fingers of the left hand hold it so the top of the bulb will be at least one-half inch higher than the rim of the pot; spread out the long brittle roots carefully and fill in the soil with the other hand, tapping the pot frequently to settle the soil; there should be half an inch of the pot left unfilled at the top for water; not over one-third of the bulb should be covered with soil. Water well, and place the pot in a warm, light situation; in the last of May sink the pot in the flower bed (putting a little ashes under the pot) and keep it well watered; the flowers will appear in August and September. The flowers are produced on a stalk from two to three feet high, each stalk bearing from one to a dozen blooms, the individual flowers being from three to six inches in diameter. The ground color of the flower is white, the lower portion usually with a greenish tinge, while the upper part is variegated or suffused with a rosy carmine color; they have a peculiar, but agreeable fragrance. After flowering, the leaves will appear. When the frosty season approaches remove to the house, continue the water supply until the old leaves turn yellow, when gradually withdraw until they are withered entirely, after which no water should be given until the following spring.

A. Johnsonii.—With this variety I always pursue a similar routine of treatment as with the *Belladonna*, although some authorities recommend continuing its growth during Winter, claiming that it will flower during this season, thus having two flowering seasons for the one bulb. The flowers are of the richest and most brilliant scarlet, with a distinct white stripe in

the centre of each segment; in size and shape they resemble *Lily candidum*. They are gorgeous indeed.

A. vittata is a handsome variety with white flowers, variegated with exquisite rose.

A. longiflora is a clear rose-colored flower. The two latter require similar treatment to *Belladonna*. They are both exceedingly handsome.

NEW OR RARE PLANTS.

DOUBLE GERANIUMS.—Mr. Conrad Kirchner, of Philadelphia, hands us a dozen kinds of seedling double Geraniums, which he has raised the past season, which shows that new double Geraniums may be raised as easily as new Strawberries or new Peaches. We shall soon have to be fastidious as to what we call first-rate. We want now good broad petals, and flowers of regular form. In these respects one of these is like but superior to *Asa Gray*, and some of the lighter colored ones will probably be distinct enough to merit names and distribution.

CROTON DISRAELI.—The Various forms of Croton are among the most popular of leaf plants, and as most of them do well in rooms and cool green-houses, they are well suited to a large class of our readers. It is hard to tell whether they are distinct species or mostly mere varieties; but this is of no importance to the lover of plants who desires only distinct beauty. For the introduction of the present pretty kind, which has been named after the celebrated English Premier, Europe is indebted to Messrs. Jas. Veitch & Sons, of Chelsea, England, who give the following description of it:

"We are indebted to the kindness of A. H. C. Macafee, Esq., of Sidney, N. S. W., for this most distinct addition to this popular class of foliage plants. It possesses a new feature of great interest in the trilobate form of its leaves, the middle lobe being greatly elongated, with a broader expansion near the extremity; the two lateral ones comparatively short, of unequal size and length, and expanding from the mid-rib at about one-third of its length from the base. The coloring of the foliage is rich and varied. In the newer leaves the mid-rib and margin are of a light yellow, with the light green blade blotched and marked with the same color; as the foliage

becomes older the yellow subsides to a bright orange yellow, the marginal line becoming more defined, and the markings enlarged; in the mature leaves the margin is a bright scarlet, and the mid-rib is striped by a band of the same bright color between two lines of a deep golden yellow, and the blotchings and markings a rich orange yellow, upon a deep green ground."

Texas, writes: "Several years ago a friend, Mrs. S. S. Thomas, of Carbon Cliff, Ill., sent me a few seeds, which she reported as a Chinese plant seed, sent home by a Consul. Chinese name, 'Boo-Yong.' I grew one plant—I have it now blooming in my grounds—I call it a Hibiscus. I have propagated it both from cuttings and seed. The plant grows ten or more feet in height: five



CROTON DISRAELI,

SCRAPS AND QUERIES.

VARIETIES OF CARNATIONS.—C. Pinks asks: "Will some one be kind enough to inform me through the columns of the MONTHLY what is the difference between Carnations Peter Henderson, Boule de Neige, Peerless, White Perfection, and Edwardsii, and oblige?"

A CURIOUS PLANT.—Mrs. S. E. B., Houston,

pointed palmate leaf. The bloom is a large double white, opening in the morning; by noon a delicate pink, by evening a deep rose color, so that my hedge of the plants present a very showy appearance of white and rose colored flowers. The first year the plant was killed down by frost, but now stands the Winter. Texans call it the Cotton tree, on account of the resemblance it bears the Cotton plant. I at first

supposed I had the only plants in the United States. I sent some to a nurseryman and florist in New Orleans, and recently a plant was received here from Mr. Langdon, of Mobile. So, it seems that this new plant, if one, is suited

to our climate, and blooms in October, when there are but few shrubs in bloom. The flower is five to six inches in diameter, borne in terminal clusters; only two or three in bloom each day. Do you know anything of this plant?

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

Very little can be done now in this department, except by way for preparation for another year.

In the fruit garden, there is not much to be done besides thinning of branches where too thick, cutting out weak or exhausted ones, so as to give place to younger or stronger ones,—and, where there are scale insects on the bark, washing to get rid of them. When a tree is badly infested, the twiggy portion should be wholly cut away so as to more perfectly clean the balance.

Manure can be placed on the ground wherever required, and Asparagus beds, if not already done, should have a slight covering of it. Bean poles, Pea-brush, and stakes of all kinds should be got now, the tool house gone over and put in order, and everything kept in good order and studiously in its place. When the season of operation commences, there will then be nothing to hold back the attention.

Where there can be heat of 60° commanded, Bush Beans can be usually grown in pots, and can be gathered in two months from time of sowing.

If there is abundance of leaves or manure at command, and small frames, beds may be put up for early Spring salads, at the end of the month. Radishes and Lettuces are, however, very impatient of too much heat; they will come on well if the temperature be kept at 45°. When it goes above that, the sashes should be lifted entirely off. The same remarks apply to the Potato and the Early Horn Carrot.

Cauliflowers in frames require all the air pos-

sible. Never allowed to become dry; this is the cause of many failures by way of "buttoning off."

COMMUNICATIONS.

GUMBO.

BY MRS. S. E. B.

Gumbo is the name of soup; Okra is the plant. Okra is cultivated in every vegetable garden in Texas. The tender pods are boiled and dressed with salt pepper and butter, and always called Okra. Soup, made by boiling beef, chicken, or duck until the meat will part from the bone, which is then chopped fine as for mince meat and put back into the soup, and young Okra pods cut up thin across the pod are put into the soup and simmered for an hour, red and black pepper are added, and when done it is called "Gumbo," and persons accustomed to the dish are very fond of it. The Creoles often add Sassafras leaves cut fine to give the Gumbo a flavor and add to the mucilaginous qualities of the Gumbo.

Okra is much used in all soups with other vegetables. It should not be cooked in an iron kettle, as it turns the Okra black. The test for Okra is to break the pod from the plant; if it will not break it has passed the edible state. Okra, Tomatoes and Green Corn, in equal quantities, seasoned with butter, pepper and salt, and baked for two hours, is a favorite Southern dish.

SOME OF THE NEW FRUITS IN NEW HAMPSHIRE.

BY JAMES M. HAYES, DOVER, N. H.

During the past season I have noticed the growth and general character of some of the

fruits of recent introduction—new to us in these parts but old sorts it may be in other sections of the country. Amongst Pears we have had an opportunity to test for the first time the splendid *Souvenir du Congres*, and it is not saying too much to use the adjective splendid in the superlative degree when speaking of this fine Pear. The specimens that I saw weighed twelve ounces, which we call large here, but it might not be accounted so in the more southern locality of Philadelphia, or in that paradise of fruit, California, yet good for the Granite State. The fruit is fine grained, the tree is hardy, and we cannot see why this variety is not a great acquisition. I have also noticed the *Champion Grape*, and I must acknowledge it is rather poor in quality, poorer perhaps than any other of the new varieties, and were it not for its great hardness and vigorous growth, combined with its extreme earliness, it would be discarded at once; but the qualities mentioned make it a possibility to raise fruit, although it may be of a poorer quality, even as far north as New Hampshire. We have also the *Brighton* planted, but have not fruited it as yet. Our aim is to get an early Grape that is good; this we must have in order to succeed, for with most of the Grapes that we now have it is almost impossible to ripen them oftener than one year in three. Hence it is better to have a Grape of rather poor quality that will ripen early than to have green Concord or Catawbas. Then we say to Grape growers as far north as we are, try the *Champion*, and Grapes of that class.

NEW OR RARE FRUITS AND VEGETABLES.

MOORE'S EARLY GRAPE.—It is said to be earlier and better than Concord and Hartford, and to be one of the twenty-five hundred seedlings raised by Mr. Moore, of Concord, where also the Concord originated.

THE PRENTISS GRAPE.—We have some bunches of this new variety. The bunches are of medium size, but they have a large number of amber green berries thickly set. These are remarkably full of juice, and seem grateful to the palate. The chief objection is in the terribly thick skin. More is returned from the mouth than is swallowed. For all this we believe it contains elements of popularity.

SCRAPS AND QUERIES.

LATE PEACH.—From J. Zimmerman, Lancaster, Pa.; on the 16th of October, came to hand some excellent Peaches. They were medium in size, freestone, and of a rich juicy flavor.

FINE GRAPES.—From Mr. Kenders, gardener to E. Beneson, Esq., of Chestnut Hill, we have a bunch of remarkably fine *Black Morocco Grapes*. It is remarkable as being thoroughly ripened in a cold grapery, which is unusual. The individual berries were uniform in size, and mostly about three and three-quarter inches round. It was an instance of excellent skill in treatment, which we are always glad to note.

DESTRUCTIVE STRAWBERRY INSECT.—M. C., Cuyahoga Falls, O., writes: "I send, to-day, by mail, some Strawberry plants that are damaged by a little white worm that feeds on the bark of the roots; also some of the worms. They made their appearance in this neighborhood about five years ago, and are much more numerous now. We are under the necessity of setting out a new plantation every year, as we can only raise one crop of fruit before the patch gets ruined. Some varieties seem to be injured far more than others. The *Duncan* and *Springdale* are almost ruined, while the *Capt. Jack*, *New Dominion* and *Crescent Seedling* are but slightly damaged. I shall be glad if you or any of the readers of the *GARDENER'S MONTHLY* can give us a remedy."

[The appearances were not familiar to us. Send a few of the insects next year to Prof. Riley, Washington, D. C.]

FRUIT GROWING IN PENNSYLVANIA.—We quite agree with a correspondent who thinks "the enclosed may be a settler for those who think the apple is not profitable in Pennsylvania."

Charles B. Ott, of Springfield, is an extensive and successful grower of apples for market. He has an orchard of forty acres, of which ten acres are of the *Red Astrachan* variety, now just ripening and ready for sale. This apple is of a fine red color, quite acid in flavor, and well adapted for cooking and eating. Mr. Ott's trees this season bear a fine crop, and he is actively engaged in sending the product to the neighboring towns, where they are sold without difficulty. The apples are carried in wagons to Easton, Quakertown, Bethlehem, Allentown and Catasauqua, and the trouble is to find sufficient transportation at this busy season. The price realized is about \$1.20 per bushel, at which Mr. Ott's apple crop pays him pretty well. The soil of that portion of Bucks county is admirably adapted to fruit growing, and the opening of an avenue to market by the construction of a railroad would add greatly to the value of real estate.

FORESTRY.

COMMUNICATIONS.

THE HARDY CATALPA.

BY SUEL FOSTER, MUSCATINE, IOWA.

In the GARDENER'S MONTHLY of November Mr. Horace J. Smith has informed us of the large Catalpa in Fairmount Park, and in your note of this old Catalpa you say, "What will these Western friends think who believe Southern Indiana produces the only hardy Catalpa?" And yet neither Mr. Smith nor yourself have told us whether the Fairmount tree is of the common late blooming colored flower, or the hardy, the early blooming, the large white flower, with large seed pods. The same remark in regard to those of Southern Indiana. Who can tell which variety they are?

I infer that you think it hardy. We know that many fruit and forest trees are called hardy at Philadelphia that are not considered hardy in Iowa and Northern Illinois, where occasionally we have a Winter that will kill Smith's Cider, Tulpehocken, Baldwin, Newtown Pippin, all the Heart Cherries, and Peaches, and half the Pears and Plums. How is it possible for you to tell the hardy Catalpa from the tender, when both stand the Winters of Philadelphia? Dr. John A. Warder, of Ohio, was at my house this Fall, and he says that at Dayton, where he discovered that there were two distinct varieties of the Catalpa, they had not discovered the difference in hardiness, because both stand the Winters of Dayton.

We have been too slow in making the important distinction between fruit and forest trees that will live or die when those severe trying Winters come, and come they will, and kill the common tender Catalpa and our tender fruit trees, which may be hardy with you. Dear-bought experience is valuable, and we have it.

[Mr. Barney taught us how to distinguish the Catalpas by the roughness or smoothness of the bark. The hardy Catalpa at Fairmount Park is the tender one.—ED. G. M.]

EDITORIAL NOTES.

CATALPA PLANTING IN THE WEST.—We are glad to learn that Robert Douglas, of Waukegan, is engaged in the delivery and planting of 100,000 Catalpa trees for the Fort Scott Railroad Company. The Railroad Company has done a good thing, not only in planting for its future timber supply, but also in selecting the Catalpa for the purpose. We have had ocular evidence that the timber as posts is as near indestructible as timber can well be, while the rapidity of its growth is enormous. A tree on our own premises, cut down eight years ago, showed an average annual increase in diameter of three-quarters of an inch a year. Some of the annual rings were half an inch thick, making an inch in the total diameter of the trunks. The trunk was made into fence posts. One taken up last Winter was as clean as a new post. To be sure, seven years is not much, but many kinds of wood would have shown some signs of decay at least in that time. The good point in this timber is that while hard and durable, it will hold nails, and this is a good character all hard woods do not possess.

THAT HARDY CATALPA.—The *Rural World* says that only the newly discovered variety of Catalpa is hardy north of Indianapolis, and those nurserymen who say it is, and sell accordingly are "swindlers." What is the mystery behind all this plain language? Are we entering on another white-willow campaign?

PROFITS OF FOREST CULTURE.—We have repeatedly shown that if forest culture were carried on as a business, there is nothing that would be more profitable when well managed. It would not pay when bungled any more than any other. To merely plant a lot of trees and wait till they are saw-logs will never do, except for one who is willing to die for his country, or merely desires to preserve her in the dim future from becoming an "arid waste." Forestry, when conducted as it might be, ought to be able to pay all expenses in a few years after planting,

and at least in ten years bring in a very handsome profit on the whole capital expended.

We are very glad to see that this making of forestry a sound business occupation is progressing. Mr. Richard S. Fay, has been doing a little towards it, of which we find the following account, by Prof. Sargent, in the *Massachusetts Ploughman*:

"The readers of the *Ploughman* are familiar with the experiment, which was made some thirty years ago by Mr. Richard S. Fay, in planting a portion of his estate near Lynn, in Essex county, with European Larch and other forest trees. Up to a year ago the thinnings from this plantation had yielded some seven hundred cords of fire wood, besides a very large amount of fencing material. The thinning has been continued during the past winter, and has produced:

175 cords of fire wood, sold at an average of \$5.50,	\$962.50
500 Larch posts, 25 cts.,	125.00
51 Larch Telegraph poles, \$1.00,	51.00
100 Larch Railroad sleepers, 50 cts.,	50.00
	\$1188.50

These figures represent the thinning of a single season, which will be continued for many years to an equal or greater extent; they seem to make very clear Mr. Fay's wisdom in employing agriculturally worthless land in the only way in which it could possibly have been made to yield any return whatever. It ought to be a part of the regular Spring work of every farmer, having suitable land, to plant annually a few hundred or a few thousand forest trees, according to the size of his farm and the extent of his means. The cost of the trees and of planting them is comparatively small, while profits, although slowly realized, are in the end, all things considered, enormous.

For planting on much of the waste land of this State, no tree can be more safely employed than the European Larch, as Mr. Fay's plantations of this tree shows us. The Larch, however, must be transplanted very early in the Spring or it will not survive the operation."

This is only a beginning, and when the business is better understood a much better showing, and before thirty years, could be made. The Larch was evidently chosen at a time when it was thought very important that Scotch forestry should be the model for American forestry, and not that America required distinctively American treatment. The Larch is profitable, but it

is far less profitable than many other kinds of trees would be. It may also be noted that those who are going into timber culture must remember that some of Mr. Fay's figures are high. It is chiefly because railroad sleepers are fifty cents each that the railroads are anxious to have more timber planted. They will not, nor ought they to bring fifty cents each, when the most judicious kinds planted in a judicious place shall come into market.

But we do not care to be critical in this place. Mr. Fay and Prof. Sargent too, deserve much praise, for what they have done and are doing in encouraging forestry, to make criticism pleasant. And yet it is very important that in an interest like forestry, where, if the planter blunders, he is eternally lost, he should start in a faith that will produce the best of works.

AMERICAN SUMAC.—In some of the earlier numbers of the *GARDENER'S MONTHLY* we pointed out the absurdity of sending so much money to Europe for Sumac when we have quite as good an article in abundance wild at home. It is among the most pleasant of the reflections on our past labors to see how the collection of American Sumac approaches the rank of an important national industry. When American forestry reaches the dignity of a first-class business, as we hope yet to see it reach, we expect Sumac to be one of the little items which is to make the forest yield a revenue long before the timber is fit for railroad ties.

However until this time comes we must do the best we can by Sumac in itself. The following paragraph from the *Prairie Farmer* gives some additional information to that already recorded in our pages:

"In relation to the matter of Sumac, and its preparation for market, which a correspondent in Pennsylvania asks us to investigate, and the proper manner of preparing it for market, previously published in the *Prairie Farmer*, Mr. Joseph H. Bryant, No. 2,619 Main street, Richmond, Va., writes us that he is paying seventy-five cents per hundred pounds at the mill there, and adds: 'The leaves only are wanted, but to facilitate the gathering of it, the small stems on which leaves grow can be stripped from the stalk, as in pulling corn blades. It must be free from sticks, sand and berries. Dry it in the shade. If exposed to the sun, dew and rain, it will turn yellow and become worthless. Spread it on a floor, and turn it morning and evening until it is perfectly dry. Do not pack it in bags or pile in bulk,

until it is thoroughly dry. Be careful it does not heat. When Sumac is properly cured it is of a bright green color.'

The editor of the *Shoe and Leather Reporter*, New York, writes as follows: 'The leaf and leaf stems only are used, and all large stems should be thrown out, as only the leaf stem has any tanning strength. It should be gathered in this way: Break off the parts of the bush containing the leaves, but do not gather the blossoms or berries. Some gatherers allow the Sumac to wilt a few hours in the sun, while others convey it immediately into the shade or under cover. Cure it under shelter, to preserve its color and strength. When dried, by spreading out, it should be thrashed with a flail, when the leaves and stems will break up fine, and all the large stems should be raked out. As to the use of and demand for the article, we can only say that it has been a staple product for the past ten years, the prices varying with the amount of production and the quotations for Sicily Sumac, with which it is

always a competitor to some extent, although it brings usually only about three-quarters the price of the latter. Large quantities of Sumac are used in Lynn, Mass.' "

SCRAPS AND QUERIES.

THE SPECIOSA CATALPA.—E. J. M., Egg Harbor City, N. J., writes: "I see you think the so-called new Catalpa of the west is different from the eastern one, because the seed vessels are so much larger. Please tell us whether that Speciosa will beat the one I enclose, which is our common kind here."

[The seed vessel is twenty inches long—still wanting three inches in length of a specimen sent us by Mr. Douglas, of what they call their new variety. New Jersey must try again. Still it shows well for the little sand-bank State.—ED. G. M.]

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

CARNIVOROUS PLANTS.

BY PETER HENDERSON, JERSEY CITY HEIGHTS,
NEW JERSEY.

"*Carnivorous Plants*.—Mr. Francis Darwin has proved very conclusively the truth of his father, Charles Darwin's position, that the so-called carnivorous plants do make use as food of the plants they catch. A large number of plants were fed on meat, and as many on what they could get from the earth as best they could, and the difference in growth and final product were very much in favor of the meat-fed plants."

The above I cut from a contemporary Journal. Resolving to fairly test the correctness of Mr. Darwin's theory, I last season procured in March, from Keenansville, North Carolina, a large number of *Dionaea muscipula* (Carolina Fly-trap). The plants arrived in fine condition,

and I resolved to test fairly, on a large scale, the correctness of Mr. Darwin's conclusions. Selecting from the lot two hundred of the strongest plants, I thoroughly rinsed them again and again in water, so that every particle of soil and all other matter foreign to the plants was removed. I then procured two boxes, three feet by three feet, and three inches deep; these were filled with Moss (*Sphagnum*) and sand mixed, in about the proportion of four parts Moss to one of sand, forming a soil somewhat similar to that which they had been growing in naturally; this compost had been also subjected to the rinsing process so as to clear it from impurities. One hundred of the Fly-traps were planted in each box, the plants selected being as nearly alike as possible. After planting, the boxes were each copiously watered with pure water and placed in a cool and partially shaded greenhouse. One box was covered with a wire netting, as fine as could be procured, so as to

exclude insects; the other was left uncovered. By about the middle of May, two months after planting, the plants had begun to grow freely, and the "feeding" process was begun with the plants in the uncovered box. In this, I was assisted by Mr. William Tait, one of my neighbors, a gentleman of leisure, and one who is well versed in many branches of natural science; between us, the one hundred uncovered Fly-trap plants, were "fed" almost daily for three months with flies and other insects. In August, three months from the time the feeding began, the operation was stopped, and the most careful examination and comparison failed to show the slightest difference between the one hundred plants that had been "fed," and the one hundred (under the wire netting) that had not been "fed," both lots had made a splendid growth, and were the admiration of scores of visitors. I never omitted an opportunity to ask professional horticulturists visiting us for their opinion, and the verdict invariably was that both lots were identical, as near as could be. In this case, the "feeding" certainly did not fatten. It may be that our American flies were not so nutritious as the English "meat," though certainly ours was the more natural food of the two, but as corroborating the test of Mr. Darwin, it completely failed.

What we are all after is the truth in this matter, and in case my experiment may have been in some way defective, or that the prejudices of myself and friends against a theory that seems to reverse the whole order of nature, may have in any way influenced our judgment, I will be most happy to furnish, without charge, to any dozen readers of the GARDENER'S MONTHLY, who have the proper facilities to make the test, a sufficient number of plants of *Dionaea muscipula*, to further demonstrate the truth or falsity of Mr. Darwin's conclusions on this subject.

I had rather a ludicrous incident occur in relation to this matter. My friend, Wm. R. Smith, superintendent of the Botanic Gardens, at Washington, who is a thorough believer in the carnivorous plant doctrine, being at my place last Winter, after the above experiment had been tried, we got into some controversy on the subject. Now, Mr. Smith is not only one of our best botanists, but his knowledge of general horticulture is perhaps second to none in the United States; moreover, he is a perfect Wilberforce in eloquence and argument, and having driven me pretty well into a corner, he almost squelched me by taking a magnifying glass from

his pocket and showing me beyond question a minute species of shell-snails embedded in almost every one of the closed up leaf traps of the *Dionaeas*. "There," says he, "nature has placed the food—the animal food—direct into the mouths of these insect-eating plants. Can you longer doubt the correctness of Darwin's theory?" I was staggered but not yet convinced, and resolved to keep a close watch on the shell-snails "that nature had placed in the mouths of these insect-eating plants." Very soon they required no magnifying glass to see them; in three weeks they had increased wonderfully in "breadth and stature;" in three weeks more the biters were bitten, for the snails had eaten the Fly-traps almost completely up! Mr. Smith has, probably somewhat changed his base on the subject of "carnivorous plants," particularly as regards their use of shell-snails as an article of diet.

CURIOUS GROWTH OF POTATO.

BY L. J. TEMPLIN, HUTCHINSON, KAN.

While digging potatoes recently, I found a large white potato of the "Ice Cream" variety that had made a new or second growth; it had sent up a branching shoot about eight inches high. On this shoot, about an inch above its connection with the parent tuber, were three small new potatoes, about an inch in diameter. These were a beautiful pinkish-blue color. I have been intimate with potato raising, and have carefully observed their growth for a third of a century, but never observed a similar freak before. How is it to be accounted for?

EDITORIAL NOTES.

ANDROMEDA ARBOREA.—(See frontispiece). We have chosen this to illustrate as a frontispiece for our annual volume, for four reasons. First, because it is one of the most beautiful of the many beautiful American shrubs when in flower. Secondly, because, though a native plant, it is seldom seen anywhere under culture, and yet it deserves to be an universal favorite as a garden plant. Thirdly, it is so common to paint plants in flower, and yet the seed vessels are often of much interest; and fourthly, the distinctly American characteristic of an Ameri-

can shrub or tree—fine Autumn colors—is seldom given in plates of American plants.

In regard to our first point, we can scarcely do justice to its graceful beauty when in its prime of flowering, and in its native places. The writer's first acquaintance with it in a wild condition was in Kentucky, now many years ago, and the image of the beautiful scene is as fresh now as the reality was when first enjoyed. The writer, with a fellow traveller (Mr. William M. Canby, of Wilmington, Del.) had journeyed some miles through the woods, before breakfast, till we came on a piece of open ground, of some acres in extent, that was comparatively treeless. It was grown up with the "Sedge Grass" of the Southern farmer, (which it is not, but an *Andropogon*) and Blackberries, Huckleberries and similar material made up the undergrowth. The *Andromeda arborea*, scattered about so that each had plenty of room to grow, constituted all the larger arborescent growth, and these were of all sizes from say three and four feet to perhaps twenty feet. They branched from the ground, and generally had one straight leading stem, while the main branches were mostly horizontal, the lowest of course the largest, tapering to the top, and making perfect cones in outline. The flowers were then expanded, of a beautiful clear waxy white, and on long racemes which bent down, but yet curved upwards again at the apex, much as the specimen in fruit now figured does. The brow of the hill was covered with them, and far down the sides they extended till lost in the shadows formed by the rising sun. We were anxious to get to the next village for breakfast, but even hunger, tyrannical as he is, could scarcely expect us to beg pardon for stopping awhile to admire that beautiful sight. There are, however, some who know and admire it as we do, but when they ask for it at nurseries, they fail of the promised reward and do not find it. Regarding our third point, we fancy our readers, as they go through all the parts of the seed-vessels and branches, analyzing the lines and proportions with their relations under recognized laws of beauty, will see at least as much to admire as in many flowers; and this especially in relation to our fourth point—its autumn colors. Our specimen, kindly sent us by Mr. R. J. Black, of Bremen, Ohio, is just on the turn. There is yet some green left, and the winy-rose which it finally acquires has not yet been achieved. But we go back to our Kentucky wild land, and can imagine how beautiful these

wild trees must now be, covered by these slender grey drooping branchlets of seed-vessels, with their background of Orange brown leaves. We may well ask with Thomson, "Who can paint like nature?" and fancy the answer would be, perhaps, "only your artist, and then only when, as now, he truly copies her."

Our publisher's idea in getting up this chromo is, that it is a gift to those of his readers who do, or may get him some new subscribers. The editor's idea is to take advantage of this liberality to make a good point for the reader, and he trusts the opportunity he gives them to be well acquainted with this beautiful little tree will be duly appreciated. For it often is a little tree. Though it blooms when quite small—and this we take to be the rule for deciding whether a woody plant should be classed as a tree or shrub—it will often reach the height of forty feet.

We have adopted the name *Andromeda arborea*, the name used by Linnæus, because it is so known in all popular horticultural works. But DeCandolle saw reasons to make a genus, and separated it under the name of *Oxydendrum*, and as *Oxydendrum* it appears in Dr. Gray's Manual, and other standard modern works. The leaves have a slight Cranberry taste, and the Cranberry is *Oxycoccus*, or a berry with a sharp taste, and so we have its near relative, *Oxydendrum*, or the sharp tree, in reference to these acid leaves. In English it is "Sorrel Tree," and all from the same idea.

We really think that the Southern nurseryman, in accessible locations, would do a good service to horticulture by taking under culture a fair stock of healthy wild plants, and possibly serve his purse at the same time.

STRUCTURE OF THE STAPELIA.—Some remarkable discoveries have been made conjointly by Messrs. Isaac Burk, Edward Potts and Dr. J. Gibbons Hunt, of the Philadelphia Academy of Natural Sciences, and which have recently been communicated to that body. That *Asclepiadaceous* flowers catch insects is well known. In the common milk-weed and other allied plants portions of legs, antennæ, and tongues may very often be found in the flowers. These have generally been supposed to be caught as it were by accident, through the limbs being drawn through the narrowing clefts of some of the segments. But from observations made in the *Stapelia*, the well-known "toad-plant" or "carrion flower" of our greenhouses, there seems to be in this genus at least a peculiar trap, which,

on being touched, springs shut and catches what is put into it; and it is by this peculiar piece of mechanism that insects are caught. The wonderful discovery opens up again the question of the true relation in the great plan of Nature between flowers and insects. It is believed that an occasional cross is beneficial to a species, and that insects are the great agents by which in certain kinds of flowers foreign pollen is brought, to effect the cross. Insects should be regarded as the flowers' friends. So long as these captures were regarded as mere accidents, one might rest satisfied with an explanation on record, offered by Professor Asa Gray, that it simply proved there was no benefit unmixed with evil in the world. But, if we find that there are in flowers traps deliberately set to catch insects, which we suppose engaged in a special design to cross-fertilize these flowers, it is impossible to conceive that these cross purposes can be both working to the one end. Dr. Hunt suggests that possibly the plant is really insectivorous, and that the insects it traps are used to nourish the flower in its efforts at producing seed. But, as only the leg or tongue is caught, and the insect, if unable to tear its body away, remains to dry up, it is difficult to conceive just how the insect can benefit the flower. That the visits of insects are of very little use for cross-fertilization may be inferred from the fact that in Asclepiadaceous flowers freely visited by insects not one flower in a hundred perfects a seed-vessel. The great question still remains: If not for nutrition nor for cross-fertilization, what are the insects' visits for? It can scarcely be for the insects' good, when the visits terminate so disastrously to the visitors.—*Independent*.

OVI-VIVIPAROUS CREATURES.—A few years since correspondents of the *Gardener's Chronicle* and some other English periodicals took strong exceptions to Mr. Thomas Meehan's statement, that snakes would sometimes protect their young from danger by gathering them into their throats, and that some batrachians and ophidians, which, under usual circumstances deposited eggs, under other circumstances would bring forth their young alive. Even the editor of the *Gardener's Chronicle* sympathised so much with the objections as to assist one of these articles with a facetious cut, in which some creature with a tail, was supposed to be modelled after that of the father of lies, and to be an evolution, working far into the future, of one of Meehan's young snake swallows.

In view of this difficulty of believing that snakes are oviparous or viviparous according to circumstances, it is curious to see the following in the English papers now. It can, at any rate, do no harm to remind our friends, that while Mr. Gosse's facts seem to be unchallenged, they are of exactly the same nature as those which went to them from this side of the Atlantic, and that such a statement can now appear without that satanic picture being appended to it, shows at least a healthy state of progress; and we shall, no doubt, before long hear of a full belief in what is just as certainly a fact, that under some circumstances, snakes do take their young for protection into their mouths. As the little boy wrote, "Snakes is funny things."

Mr. Phillip H. Gosse had a boa which was with eggs. For a long time it manifested discomfort and restlessness, being savage and irritable, till at length it produced a family of young ones. Knowing it was the habit of this snake to incubate its eggs, Mr. Gosse was greatly surprised at the event; and the startling question occurred to him: When circumstances are unfavorable for the deposition of eggs, could a snake retain them until the young are hatched? Mr. Gosse's surmises have been confirmed by similar occurrences at the Zoological Gardens and by other writers, who, in the subsequent interval, have also given careful attention to the habits of ophidians, and have produced valuable scientific works on the subject. The fact is now well ascertained that not only *Chilobothrus*, but several other oviparous species may at pleasure be rendered viviparous by retarding the deposition when circumstances are unfavorable for them. In fact, we find that we must almost discard those old distinctions of "oviparous" and "ovoviparous," which German authors tell us are not founded on any other ground than a greater or less development of the fetus in the egg at the time of laying; or on the nature of the exterior covering of the egg, which is thicker and leathery in those which take some time in hatching, and slighter and membranous in those which are hatched either before or on deposition.

HYBRID GRAFT APPLES.—Out in the west there is a discussion about graft hybrids, in which the name of the editor of the *GARDENER'S MONTHLY* is brought in. It appears agents are pusing some wonderful new varieties, originated by grafting, and the editor of the *GARDENER'S MONTHLY* is quoted as proving that hybrids may be obtained in this way. The editor

indeed does know that this is possible; at the same time he is of the opinion that no one has systematically tried to raise any in this way, and has no hesitation whatever in believing that any "agent" who offered such a "new variety" is a "fraud."

This discussion has been going on for some time, and in view of the use made of the name of the editor of the *GARDENER'S MONTHLY*, friends have written that he ought to take some notice of it. But he has never had the slightest sympathy with those who buy of irresponsible pedlars. These people do not read the *GARDENER'S MONTHLY*, or any intelligent agricultural or horticultural paper, and all we can say will not help those who do not read.

SCRAPS AND QUERIES

ÆCHMEA DISCOLOR.—This is probably the name of the seed vessels sent by "a subscriber," Syracuse, N. Y.

THE CORAL PLANT.—J. J., Philadelphia.—Often the "Coral Plant" is the *Cuphea platycentra*, and then as often it is *Erythrina Crista-galli*. Your plant is probably the last named.

ANDROMEDA ARBOREA IN OHIO.—An intelligent correspondent writes that this pretty little tree is confined to the sandstones of the southeastern quarter of Ohio. It is scarcely found, he says, west of the Sciota, except on the sandstones near Portsmouth. We may note that Michaux, in his "Travels in America," speaks of it in connection with limestone regions.

PRICKLY COMFREY.—A Boston correspondent sends us a sample of Prickly Comfrey which he "bought and paid for," and which he pronounces an "unmitigated humbug." Prickly Comfrey may perhaps deserve this emphatically expressed character, but in the present case it is only fair to say our correspondent has been "humbugged." He has the old garden Comfrey, and not that wonderful kind which is to give 100 tons to the acre some day! It seems to be a game of "humbug" all round.

GYMNOCLADUS IN GERMANTOWN.—A correspondent writes to the editor: "Your correction of Mr. Hovey is just and well-timed. But does not my good friend know that he has, lo! these many years, been planting seeds of *Gymnocladus*, gathered at Wyck (Miss Haines'), from one

of the original trees, grown from seeds brought in by the botanist Nuttall, who gave them to a little ten-year old gardener, who germinated them in his corner, his so-called botanic garden, near the Falls of Schuylkill, and that was more than half a century ago—long enough to supply the whole neighborhood with this interesting tree. By-the-way, do you know of the beauty and value of its product as a hardwood for joinery? Come and see some panels in a new stone house here-away. If you don't know the above facts, don't blame me."

The beautiful tree on the grounds of Miss Haines, referred to by our correspondent, we believe is an anomaly in never perfecting seeds. Small pods are produced with nothing in them. At least the writer examined them several seasons and found them in this condition; possibly at other times they may be perfect.

LIGHTNING AND TREES.—B., Hartford, Conn., writes: Noting that you take an interest in the question of special trees being specially attractive to lightning, I enclose a slip and ask your opinion as to whether there is any evidence that Poplar trees are more attractive than others:

"An eminent scientific authority in Europe states that a fresh proof is afforded that the upper part of trees, especially of Poplars, is an excellent conductor of electricity (which only rends or shatters the wood when it finds a passage in the trunk), in an account of the effects of lightning on an Aspen situated in a wood near the château of Crans, on the shore of the lake of Geneva. The lightning chooses by preference the Poplar as a conductor to reach the ground, and the case under consideration is a striking one, as the tree was surrounded by other kinds, particularly Firs, taller than it. Two great branches, of eighteen and twenty inches diameter, which surmounted it, were struck by the lightning, and led it to the ground without having received the least apparent injury, while the trunk below them was absolutely shattered. Other recent observations prove the preference of lightning for trees situated near the streams or reservoirs of water, so that the best conductor for a house is a lofty tree, a Poplar especially, situated between the house and well, a pond or a neighboring stream."

The only evidence we have is the fact that a Tulip "Poplar" on the Germantown railroad near Philadelphia, was three times stricken by lightning within fifteen years. It is true the *Liriodendron* or Tulip "Poplar" is not a Poplar,

but then electricity is not to be supposed to know much about botany. There are plenty of real Poplars in the vicinity, but this Tulip "Poplar" seems to have been always singled out in preference, till the last strike killed it.

ASCLEPIAS CORNUTI.—Mrs. M. writes: "Perhaps it may be interesting to your readers in connection with the *A. cornuti*, that the plant which stood about two feet and a half high bore three pods or follicles; they generally fruit in pairs. The plant had five clusters of flowers, consisting of from thirty to sixty blooms. I gathered one, leaving four to mature. Wood says but few of the flowers prove fertile; more could not in the space. The pods measure three inches long, one inch in diameter. They average about two hundred and twenty seeds; the three, as near as I could count, had six hundred and sixty-eight seeds, sufficient for a plant of it size."

ADVANTAGES AND DISADVANTAGES OF FLO-RIDA.—C. O. S., Seguin, Fla., writes: "The greatest trouble I find here is in preventing the numerous insects from destroying the seedlings and plants. The climate is so mild that I find numerous insects ready to devour any green leaf as soon as it makes its appearance, and they are entirely different from any we have in the north. We have here ants which are called cutting ants; they work only at nights, and it is surprising the amount of damage they do in a single night. The past Spring I lost over 200 hills of Lima Beans three inches high in one night, which they not only cut down, but carried away. It is next to impossible to destroy them by any means I am familiar with, or to prevent them from eating plants. They are in hills or mounds, and I have repeatedly tried petroleum, chloride of lime, gas lime and boiling water, but the ants still live. Can you give me a cure for these pests? I have consulted all the works on gardening at my command, and can find but little said of these ants. I notice in the *MONTHLY* a communication from a writer in California, who speaks of the devastation they cause, but who gives no cure. Does he know any? If so, I would like to see it in some future number.

The climate here is simply splendid, nearly always a good breeze off the Gulf, warm through the day, cool at nights. There has been no frost here since December 24th, 1877, over ten months. We still have a few Peaches, but they are nearly gone; have had them since May. All

kinds of vegetables can be raised here to perfection, but there seems to be considerable trouble in keeping them. You will think it strange, probably, when I tell you that White Potatoes are now being brought here from the North. I never saw finer ones than were raised here the past season, but it seems impossible to keep them, they rot soon after being stored away. They sold here in July at 50c. per bushel; to-day they are worth \$2.00. With the Sweet Potato there is no trouble; it keeps in fine condition by burying in the ground, the same as is done with Turnips in the North. I would be glad at any future time to give you a full description of this part of the country, and its products, if you think it would be of any interest to the readers of the *MONTHLY*."

HYBRIDIZING WHEAT.—A correspondent sends the following which he finds in a public document, from the pen of a high official, and asks us to comment on its absurdity:

"Another maxim which farmers generally accept as an axiom is, that by sowing Wheats of different qualities together, they will so hybridize as to produce a mixed breed; while even a little observation would teach them the error of this conclusion, and that each grain produces its own like, and that really no hybridization takes place at all, and that the mixture of seed produces the unmitigated evil of mixing Wheats which perhaps ripen at different periods, or perhaps require different treatment when they come to be reduced to flour. A little study of the nature of plants would seem to be necessary to a knowledge of their proper treatment during their growth. Of the flowers of plants some are male and some female. In some the staminate and pistillate flowers occupy different parts of the same plants, as in Indian corn. In the larger number of plants the male and female organs mature at the same time in the same flower; and of these some are subject to self-fertilization, and others to cross-fertilization. Such plants as Peas, Beans, Wheat, and Barley have the male and female organs within themselves, and are not subject to cross-fertilization, and therefore it is that Wheats do not mix their qualities at all by being planted together; and as it is objectionable for other reasons, it should never be done. The leaf or flower which protrudes from the glume of Wheat is neither an anther, a pistil, nor a stamen, and neither emits nor receives the fertilizing pollen."

It is to be sure rather bunglingly written; especially so for a distinguished official, but as a question of fact and looking to what the writer

evidently meant to say—which is the charitable way of looking at things—we do not see a great deal to object to.

LITERATURE, TRAVELS ^N_Z PERSONAL NOTES.

COMMUNICATIONS.

ASCENT OF PIKE'S PEAK.

BY ISAAC C. MARTINDALE.

September 1st. Hardly knowing what may be the duties of the day, I conclude to be up before the sun, and "prospect" a little, as that seems to be a significant word here; I also find others of the same mind, and the ascent of Pike's Peak determined upon. It is usually made by the use of ponies, which are small sized horses, and mules; occasionally some stalwart individual with plenty of muscular development and more pride of purpose, sets out to make the journey on foot; of our party there are two of this character, and with knapsacks supplied with provisions, &c., at five o'clock they turn their backs upon the hotel, and face the mountain path; an hour later two more take the road, mounted, thinking perhaps the day will be short for the work to be performed. The ascent is usually made without a guide, and as fourteen persons have decided to go, these are thought to be all sufficient in our case; but that some one should have the oversight of the party seems essential, accordingly the invitation has been extended to myself to perform that office, I having had the experience of leading a party of twice the present number over the Tête Noire Pass of the Alps, in Switzerland, in the Summer of 1874. The position of leader secures to me the choice of the stable, and I make the selection without delay. An early breakfast has been ordered, and all are expected to be in the saddles ready for the ascent at half-past seven o'clock. 'Tis a glorious morning; not a cloud obscures the sun, or makes a shadow on the mountain side, a gentle breeze moves the foliage in the valley, but perhaps that will soon die away. The countenances of the party show to the full anticipated joy;

four of our company are ladies, who have sufficient strength of purpose, nerve and will, to attempt the height. Each person is supplied with lunch, and a sufficient quantity of clothing, should the atmosphere prove to be cold ere we reach the top. The appointed hour finds us ready, and we wave adieus to those we leave behind, and seek the trail. This year, as I am informed, is the first time the ascent has been made by the course we take; the trail thus being a new one is reported to be in good condition, and somewhat shorter than the route of former years; yet fourteen miles is the distance we are expected to travel ere we reach the United States Signal Station, on the top of the Peak. The road leads us into Engelman's Canon, and I am indeed much pleased to find it so, that I may have an opportunity to see the beauties and the grandeur of its ways. Again do I call in service the experience of my friend Meehan, for he was the first white man that ever explored its fastnesses, set foot upon its rocks, or drank of its crystal floods; 'twas he who, as its first explorer, gave it the name of Engelman's Canon, in honor of the great botanist of St. Louis, for the reason, as he informs me, that he found Pines and Spruces growing far up the Canon in great profusion, and immense in size, beautiful anywhere, but much more attractive here in their native elements; and every student of the vegetable kingdom well knows, that we are indebted to Dr. Engleman more than to any other person, for much of the knowledge we possess of the coniferous trees of North America, he having recently added to his previous publications several monographs of various sections. For about a mile the road is broad and well made, suitable for wagon travel. There are many residences on the hill-sides, which in the early morning look fresh and home-like. Along the stream are several camping parties, who

have come to spend a fortnight or more in a quiet way, apart from the tumult of a busy world; some of these in true traveling style partake of the morning meal, while others are not yet astir, but have left the faithful watch dog as guardian of the realm whilst they sleep; we disturb them not, nor envy their repast, for at present ours are higher aims, and we even cast no longing, lingering look behind, so intent are we upon the beauties before. Close by the rapid stream our pathway leads; the Poplars and the Willows arching overhead, make a romantic ride. My mind is fully alive to these surroundings, and though I may fail to make intelligible the record with my pen, to those for whom I write, there is not a doubt but that from the first hands I have received a full, a realizing sense of all there is to see. Two miles on our way we halt at the toll house, for I have learned that 'tis not alone on broad, smooth highways through the country that a tax is laid. The assessment is one dollar and fifty cents for each horse, and its collection is about sufficient to keep the trail in repair; each pays the duty, and forward we move again. Now the ascent is fairly begun, and a winding circuitous up hill way it is; we have taken the left hand side of the mountain stream, and it seems to have been selected as being best suited for the purpose. The name given to this stream is the Fontaine-qui-Bouille, and 'tis well named; we hear the boiling, rumbling sound as its waters dash against the rocks, we see now and then, amongst the trees far in the depths below, its foam and splash, as a plunge is made into cavernous recesses, or as it reappears from beneath an arching rock; the volume of water is considerable, and when the discoverer of Engleman's Canon announced to the world that he had seen therein a tempestuous, roaring mountain stream, a wild and foaming cataract, a torrent dashing headlong down among the boulders and the rocks, he only did what I have here essayed, tried to give a faint conception of the truth. Flowers in great profusion bloom close to the water's edge, and some find their way far up among the rocks. The Maple and the Willow, the Poplar and the Birch are growing side by side, but chief among the host, and altogether lovely, is the towering Pine; such specimens as I have nowhere else beheld, with Firs and Spruce of equal beauty. The botanists who have visited these mountains years ago, have distributed among the nurserymen in the East, seeds of most of the species that occur

here, and these have introduced them into the parks and lawns about our cities and among the residences of well to do country folk, so that they are not entirely unknown; but the stateliness of figure, symmetry of form, and harmonious surroundings, fail not to impress the lover of the beautiful, that in their homes and not in ours, is to be seen their full glory and beauty. These are the Rocky Mountains,—and if it is because of granite boulders everywhere abounding, rocks so large that one cannot form a conception of their size or weight, then the name is appropriate; so close upon our path they come that many have been blasted or broken to make the way, and where a mis-step or a slipping stone could not bring anything short of instant death, by dashing over precipices hundreds of feet. Several times we cross the seething flood, the slender bridge of logs bending and quivering under the horses' weight; we pass to the right, then to the left, and make such sharp turns, that the way before us is oftentimes not visible ten yards in advance; so we rise the mountain side some thousands of feet, reaching at last a charming spot known as Sheltered Falls, where we rest our horses, and regale ourselves with draughts from the crystal flood that comes from underneath the sheltered rock; this with the Naiad's Grotto, just above, is enough to pay for all our toil, if we should find nothing more attractive beyond; but even these fairy scenes we cannot always know, and so we turn our backs on this, only to have opened a grander, a more extended sight, for here the valley opens in full view, the length of miles we have already come; the sloping mountain side, with its coverings of green, the sentinel rocks on Cameron's cone, the rushing flood pausing not, but winding when it reaches the valley, and there like whitened specks the houses of Manitou appear in the sunlight. Not long the time allowed to take in a scene like this; again we cross the boiling flood, and along a stretch of open mountain side with only here and there a pine, and these not the same species as we saw farther down the Canon, for every certain distance more or less, according to the shelter or the slope, the species change as higher altitudes are reached. Crossing again the stream, which by this time is much reduced in size, we enter a level meadow hundreds of acres in extent; here is a remarkable growth of Aspen, in some places so close together as scarcely to admit the passage of a person among them; the ground is well covered

with tall grass and an abundance of blooming flowers, Gentians, Blue Bells, Potentillas, several species of Pedicularis, Pentstemon, and Gilias, wild Dandelions, Rudbeckias, and a kind of Thistle not seen before; passing through this we come upon the Pine and Spruce again but still of different species. Over a crest of rock our horses move with steady pace and slow, and the Lake House comes in view a short distance farther on. A beautiful sheet of water is here, and the house is close by the shore. Those who wish to commence the ascent in the afternoon, make this the stopping place for the night, but from all the show of comfort that we behold, I would as leave take a blanket and make my bed beneath a spreading tree, with the blue sky the canopy over head. Here we overtake the pedestrians that left Manitou two hours and a half in advance of us; they are still looking top-ward, but their slackened pace tells the story of tired feet and aching limbs. On the march again, ere all our party get together, for some cannot ride so fast as the leader, and have lagged far behind. We are now at an elevation of 10,175 feet and I notice a rapidly increasing change as we mount higher; the growth of timber, nearly all Pine, becoming less dense, though many of the trees are still of large size; there is but little of it young, and much of the old is dead, and dying; the sweeping winds of Winter have prostrated many of these, which makes a picture of desolation indeed, though curiously interesting. The ascent is becoming more and more steep, but fewer rocks, consequently less winding is the path.

At 12,000 feet elevation, another kind of Pine is seen, and soon we pass beyond the "timber line," into the open world again; the open world, how natural the expression, for it is open in the fullest sense; we are so far above many of the other mountain summits, that we seem to look down on a vast sea of peaks, which lose individuality as they fade away in the dim distance, but still the "timber line" is discernable, curving up and down, according to the sheltered location. The flora has completely changed, and assumed its Alpine character, dwarf Blue Bells, the yellow Senecio, some species of Saxifrage, a blue Forget-me-not, so limited in range, as not to extend more than ten yards up and down, with a few of the pink tribe, a beautiful Gentian which opens its whitish petals in the sun, some grass and sedges, all of which gradually become smaller in size as we mount higher. We pass

those who left the hotel at 6 o'clock and pursue our way now in advance of all. W. H. H. Russel, of St. Louis, is the only one of our party who keeps close beside me, the others falling farther and farther behind, as the ascent becomes more and more rugged. The unclouded sky of the early morning is now changed and I fear the forebodings of a storm is apparent; the sun is obscured most of the time, a chilly feeling is in the atmosphere, and I remark to my companion, a storm cloud is gathering fast. Just as we reach the limit of vegetation, except the lichens on the rocks, a slight rain sets in, soon changing to sleet, then to snow and hail.

We are now among the rocks, and scarcely can we discern the trail; faster and faster falls the snow, not large in size, perhaps not larger than peas are the hail stones, but in numbers, there are no means of measurement; our horses shake their heads and stop. We hold a hurried consultation. Shall we turn back? for doubtless danger lies in the way before us, and we know not how much farther we have yet to go ere the top is reached. Onward and upward, is our conclusion, and we urge the horses forward. The difficulty of breathing is now sensibly felt. So steep and rocky has become the ascent that not a dozen yards can we advance without our horses stop to draw full breaths. The severity of the storm increases; our coats are buttoned tight to keep out the driving hail, we hang our heads in silence, not a sound reaches our ears but the wind as it rushes past. So winding has become the path that we have lost sight of those who kept nearest us, so filled the atmosphere, that the depths below, the heights above, indeed the rocks are no longer discernable. Our horses evidently know the way, and on them we rely. I have known and experienced furious storms before but never aught like this. Minutes seem like lengthened periods, and we are making headway slowly. Longfellow could not have written a truer picture when he penned "Excelsior" had he been through these conditions himself. A tingling sensation in our ears, distended viens upon the forehead, bodies becoming wet and chilled, hands benumbed with cold, and yet, and yet no end. A line of telegraph wires stretched across the rocks is now in sight and courage is renewed, for we may be nearing the top, but on, on, on, the storm not sensibly abating for an instant. Around a sharp promontory of rock we slowly work our way, and then the signal station comes in view; never sight of

land to the mariner has been hailed with greater joy than this by us just now; the fatigues and dangers of the ascent are forgotten for the moment, and with shouts of triumph we hail the approach to the longed-for spot. The station is one story in height and built of rocks; a portion is for shelter for the ponies used in bringing up provisions, but not being now occupied by them, our horses find a place to shield or protect them from the furious storm. Knocking at the door we hear a voice from within saying "come in," and we enter. The sight of a human being in a place like this, and under conditions like these is a joyous one, and soon we are seated by a comfortable fire enjoying the hospitality of one of the United States signal service corps. The thermometer registers 35°, no wonder we were feeling the effect of the chilling atmosphere. By glancing over the record of observations, I find this is the coldest day for some weeks past, the weather having been fine for sometime with only partial cloudiness. From conversation with the observer, I learn that the record is taken regularly three times a day and transmitted by telegraph at once to the department at Washington, and that this is the highest "outlook" for "Old Probabilities" in the country. The observers are changed once a month during the Summer, or while the trail is open, and then is laid in a supply of wood and provisions sufficient to last through the Winter. About a month later the trail will be closed, and all communications cut off, except by telegraph, until Summer comes again; methinks I would not fancy living in such a place, although there is a library of fifty or more volumes which may furnish food for many an hour, but the days would pass "wearily and slow," and nights fearful and cold, come and go, many times repeated through weeks and months of watching.

(Concluded in next number.)

EDITORIAL NOTES.

GARDENING IN AMERICA.—An English gardener, who has returned to the Old World, thus gives his American experience:

"As regards the life of a gardener on such a place, I would say that after it is laid out, seldom more than one man is kept, and he has to look after a horse, milk a cow, see to his garden,

and make himself generally useful. If he is single he can obtain from twenty-five to forty dollars a month with board and washing; a married man may obtain from sixty to a hundred dollars, and sometimes his house rent free. A man in a place of this kind can always find plenty to do. For a man who has done nothing but work in a gentleman's garden in England, to have to look after a horse and milk a cow may appear *infra dig.*, but if he goes out there such is his work. Before I went to America I served two years' apprenticeship at one of the largest places in Warwickshire, and received eight to ten shillings a week wages and bothy; afterwards obtained a situation as journeyman at fifteen shillings a week; another at seventeen shillings as foreman. It cost me from ten shillings to twelve shillings a week to live out of that, and like a good many more, could not save much, so I became dissatisfied. I could see I should have to throw all my young days away until I could obtain a situation as head gardener, for a man is not considered capable of holding such unless he is forty years of age. I once wrote a letter about the places gardeners had to live in, known as the bothy. I did this when an apprentice, and some head gardener replied I was a dissatisfied apprentice. He was right; I was dissatisfied, although I was fond of gardening. I at last resolved to go to America with what little money I had saved, and a little borrowed. I went; I obtained a situation as gardener to be generally useful. I had twenty-five dollars a month, all found. Afterwards undertook to lay out places, this plan being the first I ever undertook on my own responsibility. It was about five miles from the city of Chicago, State of Illinois. I made thirty-five dollars a month, board and all found. The question is, did I or did I not better my seven shillings a week? Such is the life of a gardener in the far West. Why did I not learn some other trade? Simply because gardening is my whole study, and I am always happy when engaged in garden work."

ASCENT OF PIKE'S PEAK.—We give in this number a letter contributed by Mr. Isaac C. Martindale, the botanist banker of Camden, New Jersey, to the *West Jersey Press*. It is one of the most graphic accounts of the ascent of this wonderful mountain we ever read, and we are sure it will be perused with much pleasure by all our readers. As the editor of this magazine made one of Mr. Martindale's party in the ascent,

he can appreciate the full force of his vivid account.

THE AMERICAN AGRICULTURIST.—It is a pleasure to note that this venerable magazine has lost none of its youthful force by the change of proprietors. It is particularly a pleasure to trace Professor Thurber's pen through its column's as diligently as ever. It would have been a great loss to agricultural journalism if the change in proprietors had made any change there.

THE BLESSED BEES.—By John Allen. New York, J. P. Putnam's Sons; through Claxton, Remsen & Haffelfinger, Philadelphia.

As we said recently of another work, we do not admire these odd titles to books. They smack of the sensational, and we always take them up with a prejudice against their contents. Bees are no doubt a blessing, and in their way bless and are blest; but there is no more reason for singling them out for special blessing than other things. We might, with as much reason, write of Blessed Lollypops, Blessed Potatoes, Blessed Sunlight, or Blessed Kisses, as of Blessed Bees. But this is a matter of taste, and ought not to interfere with a just estimate of the contents of the work.

It seems to be a fancy sketch in the form of a story book, and intended to lead the young to love farming, fruit growing, bee-keeping and so on, all very good objects. But the trouble with most of these story books is that the fancy figures with the fancy results, are not sufficiently accurate to satisfy the one who reads pencil in hand. For instance here is the account of the Apple orchard which brought in the first lucky wind-fall after the threatened financial ruin following "father's death." The net sum, after all expenses of gathering and marketing was deducted, was \$1,196.47. There were 700 trees, and the average yield per tree was seven and a half bushels. Now this should give us 5,250 bushels, but in another place we are told the product was 3,169 bushels. However, whichever way the figures are intended to be, the result is certainly not exaggerated; for surely the trees would not be wider than twenty-five feet apart, so that we have at least sixty acres in Apple trees. By the product per tree, we see that the trees had arrived at full bearing age, at least twelve years old, and yet the product under \$30 per acre, which is no very remarkable revenue after waiting so many years. If an orchard would really not do better

than this, it is a question whether the Western farmer had not better stick to Wheat and Corn.

However, the main object of the book is to speak of the blessing of bees. We fancy beekeepers will be glad to read it, and compare the fanciful results with their actual experience. It is only \$1.00, and they will no doubt get their full money's worth.

HORTICULTURAL SOCIETIES.—We have a large number of notices of the Winter meetings of various Horticultural Societies to be held early in December, but as that will have arrived by the time the reader gets this, it is of no use to announce them. One in January, the third Tuesday, is the Fruit Grower's Society of Pennsylvania, which meets this year at Reading.

INDIANA STATE HORTICULTURAL SOCIETY. This Society will hold its eighteenth annual session in Danville, Indiana, beginning on Tuesday, December 17th, and continue for three days. A liberal premium is offered on Winter Apples. Governor Furnas, of Nebraska, is booked for an address, as well as other distinguished fruit growers from abroad. "Come over and help us," is what they write.

SCRAPS AND QUERIES.

ARE NURSERY TREES PERSONAL PROPERTY?
M. asks: "What is the law about nursery trees? Are they to be considered real estate or personal property? Ought they not, in any event, to be considered personal property? I hear some argue that they ought to be regarded as real estate."

We do not feel competent to answer this question. Different judges decide differently; nor can we say what it ought to be regarded. If one is in a part of the country where taxes are levied on personal property, he would be glad if trees were real estate. It requires a great deal of knowledge derived from the study of ages of experience to decide this.

BAHAMA PINE APPLES.—W. G. B., Media, Pa., writes of the statement quoted from the *London Colonies*, quoted in our last: "The statement in the *GARDENER'S MONTHLY*, that as many as a million and a half of the fruit (Pine Apples) has been collected from a single acre at one crop, in the Bahamas, is most astonishing; 309 to a square yard! This appears to need explanation."

INDEX.—VOLUME XX.

A

Abies Harryana, 328
 " or Picea, Which is it, 51, 185
 " Regina ameliae, 186
 " venusta, 23
 Abnormal growth of a Potato, 216
 Abutilon, Geo. A. Stanley, 204
 " roseiflorum, 334
 Abutilons, Improved, 333
 " Scodling, 338
 Acalypha macrophylla, 303
 Acer macrophyllum, 343
 " rufoeroc, 167
 Acknowledgements, 62
 " Echmea discolor, 372
 Advantages and Disadvantages of Florida, 373
 Agapanthus umbellatus, 332
 Agave Shawii, 44
 Agent, That Fraudulent, 60
 Agricultural Ants, 23
 " Club, Mass., 256
 " Department, Science in 160, 191
 " Grounds, 212
 Agriculture, Conn. State Board of, 224
 Allanthus, 3, 164
 " Additional Notes, 68
 Akebia, Fruiting of, 326
 Alabama, Fruit Culture in, 15
 Alcohol for Mealy Bug, 41
 Alexander Peach, 307
 Algiers, Eucalyptus in, 18
 Alnus Oregonica, 343
 Aleocasia Jenningsii, 265, 302
 Alonsoa albiflora, 11
 Alpine plants, 34
 Amaryllidaceae, 361
 Amaryllis, 132, 204, 236, 301
 " and Orchids, 301
 " and their Culture, 45
 " Double, 119, 160, 233
 " longifolia, 230
 Amateurs, to, 259
 America, Coffee in, 112
 " Gardening in, 377
 " Vine Disease from, 14
 American Agriculturist, 222, 378
 " and Hardy Ferns, 251
 " Bookseller, 62
 " Forestry, 50, 313
 " Globe Arborvitae, 67
 " Naturalist, 62
 " Pomological Society, 160, 192
 " Poplars, 116
 " Tuberoses, 38
 " Vines in France, 112
 Among the Orchid Growers, 169, 200
 " the Orchids, 134
 Amorophallus, Fine, 11
 Amsden's June Peach, 307
 Andromeda arborescens, 345, 369, 372
 " Japonica, 5
 " speciosa, 230
 Andromeda, 165
 Angullula radicata, 14
 Another word on Raspberries, 207
 Annual Report, Fairmount Park, 280
 Anthurium ornatum, 267
 " Shertzerianum, 73
 Antipodal Hyacinths, 72
 Ants, Agricultural, 23
 " on Geranium Roots, 280

Aponogeton distachyon not Necessarily an Aquatic, 294
 Apple, Ben Davis from Michigan, 14
 " Brewington Pippin, 112
 " Carter's Blue, 81
 " Champagne, 145
 " Chenango Strawberry, 110
 " Concerning two Species of, 150
 " Lady, 178
 " Northern Spy, 81
 " Ohio, 150
 " Orchard, Largest in the World, 150
 " Orchards, Lime for, 17, 81, 110
 " Oregon Crab, 150
 " Scribner Spitzenberg, 49, 82
 " Stocks, Dwarf, 17
 " Stump, 17
 " Swayzie Pomme Grise, 208
 " Trees, Fall Blooming of, 336
 " Trees, Summer Shade for, 336
 Apples, Celestia, 111
 " Fall, 310
 " for Mississippi, Best, 48
 " for Missouri, 81
 " Hybrid graft, 371
 " in Philadelphia, 14
 " Popular Pennsylvania, 310
 " Summer, 310
 " Winter, 310
 Aquatic Plant, Aponogeton distachyon, not Necessarily an, 294
 Arboretum, Cambridge, Mass., 51
 " Nashville, Tenn., 152
 Archbishop Wood Geranium, 45, 305, 353
 Artificial Wood Tiles, 30
 Ascent of Pike's Peak, 374, 377
 Asclepias cornuti, 316, 373
 Ascomyces deformans, 315
 Asparagus Forcing in Paris, 16
 " in England, 239, 336
 " Large, 281
 " plumosus, 303
 Aspect of a Greenhouse, 77, 203
 Aspens, 21
 Asphaltum Walks, 294
 Asters, China, Beautiful, 203
 Astilbe barbat, 5, 294
 " Japonica, 5
 Astrapea Wallichii, 41
 Austin Tex., Gardening in, 356
 Australia, Big Trees in, 149
 " Red Wood in, 313
 Australian International Exhibition, 350
 " Plants, Beautiful, 43
 Austrian and Scotch Pines, 328
 Azalea, Duke of Edinburgh, 303
 Azelas, Thrips on, 45

B

Bahama Fruits, 350
 " Pine Apples, 378
 Baltimore, Clifton Park Gardens, 318
 " Horticulture in, 318

Baltimore Park Commission, 159
 Band for Codling Worms, 240
 Barrenness in the Fig Tree, 85
 Barram Oak, 134
 Baskets, Roses in, 326
 Beans, Jumping of Mexico, 88, 213
 Beautiful China Asters, 203
 " Cyclamens, 140
 " Hydrangeas, 295
 " Turnip, 209
 Bedding, Carpet, Winter, 102
 " Plants, How may be Arranged, 34, 193
 Beds, Carpet, 98, 130
 " Ribbon, 66, 163
 Beech, Can it be Struck by Lightning, 186, 343
 " Tree, Adventitious Buds in the, 316
 " Trees, Lightning-proof, 245
 Beggar Ticks, 19
 Begonia acutae, 60
 " Double-leaf in a, 246
 " Frobelli, 204
 " kallista, 60
 Begonias, Tuberosus as Bedders, 109
 " Rooted, 272
 Belgian Honeysuckle, 263
 Belgium, International Exhibition, 224
 Belladonna Lily, 303
 Ben Davis Apple from Michigan, 14
 Berries, Service, 112
 Bible Plants, their History, 282
 Big trees in Australia, 149
 Birch, Cut-leaved, Variation in, 230
 " The, 182
 Birnam Woods, 149
 Bishop Wood, Double Geranium, 7, 8
 Bitter Sweet, Staff Tree, 195
 Black and Yellow Locust, 149, 210, 211
 " Walnuts and Orchards, 182
 Blackberry, Hoosic Thornless, 337
 Blanching Celery, 239
 Randidolia princeps, 9
 Blessed Bees, 378
 Blight, Flax, 23
 " in the Pear Tree, 116
 " Proof Stocks, 81
 Blood-leaved Weeping Beech, 4
 " Norway Maple, 229
 Blooming Hyacinth, 76
 " Roses, to the Ground, 101
 Blue Primrose, 295
 Blunders and Mulching, 226
 Bogus Agent, 60, 124, 169
 Books, Valuable, for Sale, 29
 Bonne du Puits Ansults Pear, 340
 Borders, Grape, 33, 142, 341
 Borer, Rhododendron, 24
 Boston, Fruit Prospects at, 180
 Botanical Contributions 185
 " Name of Sweet Potato, 118, 153
 Botanic Garden, Cambridge, Mass., 51
 " Melbourne, 94
 Botany, Game of, 62

Botany, North American, 160
 Bowers Early Peach, 240
 Brassia Miltonia and odontoglossum, 136
 Brazilian Journal, Scraps from, 275
 " Lelias, 232
 Brewington Pippin Apple, 112
 Briggs, Mr., Marysville, Cal. 63
 Browallia Rozli, 68
 Budding, Fast, 336
 Buds, Adventitious, in the Beech Tree, 316
 Bud the Peach, Time to, 309
 Bulbs, Deep Planting of, 295
 Burnet Grape, 50
 Burns Peach, 273
 Business and pleasure, 29
 Butterfly Flowers, 76
 Byfield Elm, 273
 Cabbage Leaf, Curious, 246
 Calceolarias, 236
 California, a Day in, 281
 " Coffee in, 149
 " Curculio in, 310
 " Dicotyle, 164
 " Fruit Notes from, 78
 " Horticulture in, 123
 " Mammoth trees of, 149
 " Raisins, 339
 " Snow Plant of, 345
 " Tea Plants in, 48
 " Timber in, 211
 " Wine, 48
 Californian Garden, 166
 Cambridge Mass., Botanical Garden and Arboretum, 51
 Camellias, 11
 Campanula Allioni, 295
 Canada, Clapp's Favorite Pear in, 178
 Cannas, 293
 Carnation, Peter Henderson, 11, 44
 " Pres. Degraw, 43
 Carnations, Varieties of, 363
 Carnivorous Plants, 37, 116, 368
 Carpet Bedding, 98, 130
 " Winter, 102
 Carter's Blue Apple, 81
 Catalogue, Cultural, 160
 Catalogues Horticultural, 125
 Catalpa Bignonoides variety speciosa, 350, 363
 " Cofins, 343
 " Large, 343
 " Planting in the West, 366
 " Timber, 51, 114, 146
 " Tree, 114
 " Trees, Hardy, 242, 366
 " Varieties of, 312
 Catechayas, 167
 Ceanothus, 291
 Celastrus Scandens, 195
 Celery, Blanching, 239
 Celestia Apples, 111
 Centaurea Clementii, 75
 Centennial Exhibition of 1876, 222, 253
 Cerasus Serotina, Wood of, 114
 Cereus, Night-blooming, Preserving Flowers of, 253
 " grandiflora, 338
 Chameleon Coleus, 362
 " Wall Flowers, 233

C

- Champagne Apple, 145
 Cherries, Early in Georgia, 239
 " Profitable, 210
 Cherry Culture in Georgia, 238
 Dyehouse, 240, 307
 " New, 270
 " Timber, 211
 " Value of, 149
 " Tree, Large, 18
 Chess, Wheat and, 344
 Chestnut, Spanish, 84
 " Tree, a Large, 182
 China Astors, Beautiful, 203
 Chinese Potato or Dioscorea Batatas, 37
 " Primrose, 204, 359
 " Primroses, Double, 43
 Chitty, H. E., 63
 Christmas Flower, a, 153
 " Rose, 192
 Chromo, Our, 347
 Chrysanthemums, New race, 6
 Cinchona in Jamaica, 84
 Cinerarias, 106
 " Double Flowered, 236
 Cinnamon Vine, 89
 Cities, Trees in Large, 261
 City Garden, A Pretty, 326
 Clapp's Favorite Pear in Canada, 178
 " Pears, 311
 Clematis, 344
 " indivisa, 11
 Clifton Park Gardens, Baltimore, 318
 Climbing Hydrangea, 356
 Coal Tar on Fruit Trees, 272
 Cobaea scandens, Variegated, 140, 233
 Codling Moth Destroyer, 310
 " Parasite on the, 185
 " Worms, Band for, 240
 Coffee Culture in Southern States, 15
 " in America, 112
 " California, 112, 149
 " Liberian, 87
 " Tree, Kentucky, 325
 Coffins, Catalpa, 343
 Coleus, Chameleon, 302
 " pictus, 43
 Colorado Firs and Spruces, Hardy, 242
 " Potato Beetles, Remedy for, 216
 Comfrey, Frickley, 372
 Common Names of Plants, 22
 Comparative Rose list, 130, 162
 Connecticut State Board, Agriculture, 224
 Constantinople, Vegetation around, 283
 Construction of a Tree, 89
 Consummate villian, 243
 Convolvulus Batatas, 118
 " Ipomoea, 153
 Cooking Puff Balls, 13
 Cool House, Orchideae, 39, 230
 Coral Plant, 372
 Corporation, Forest, 275
 Correspondence, 2, 7, 13, 19, 24, 34, 39, 47, 51, 53, 63, 66, 71, 78, 83, 85, 90, 95, 98, 103, 109, 113, 115, 119, 129, 134, 140, 146, 150, 154, 161, 167, 175, 180, 183, 187, 193, 200, 203, 210, 213, 217, 222, 226, 230, 236, 241, 243, 247, 257, 263, 270, 274, 277, 290, 296, 303, 312, 314, 322, 329, 336, 341, 343, 354, 358, 364, 366, 368, 374.
 Correspondence Botanique, 94
 Cottonwoods, 20
 Cottonwood, Yellow, 241
 Country Homes, 292
 Coxcomb, Dwarf Crested, 43
 Crab Apple, Oregon, 150
 Cracking of Pears, Cure for, 203
 " of the Pear, 32, 111
 Crescent Seedling Strawberry, 145, 219, 270, 310
 Cross-fertilization, 95
 " in Sabbathiana angularis, 278
 Crossing and Hybridizing, 279
 Croton Discolor, 361
 Cuscutra (Cuscuta), 238
 " Old Plants, 43
 " Wortleberries, 207
 Cultivation of the Strawberry, 307
 " of the Verbena, 105
 " of the Chinese Primrose, 351
 Culture, Amaryllis, 45
 " and Quality of Pears, 143, 175
 " Asparagus, 336
 " Coffee, Southern States, 15
 " Fruit in Alabama, 15
 " Grape, 171, 337
 " Hyacinth, 331
 " Medellina magnifica, 139
 " Native Plants, Notes on, 166
 " Water Lily, 5
 " Orchard Trees, 273
 " Orchard, Ed, 174, 296, 329
 " Pear, 110, 178
 " Plant in the West, 43
 " Tea in the South, 148
 " Window, 170
 Cuphea Roczel, 75
 Cupressus Lawsoniana, 5
 Curculio in California, 310
 Cure for Cracking of Pears, 203
 " Mealy Bug, 12, 202
 " Thrips, 234
 Curious Plant, 363
 " Growth of Potato, 369
 Curl of the Peach Leaf, 315
 Current, Utah, 113
 Cut Flowers, New-fashion in, 74
 Cut-leaved Birch, Variation in, 230
 Cuttings in Arkansas, 82
 Cycas Normanbyana, 108
 Cyclamens, Beautiful, 140
 Daffodils, 327
 Dahlias, 328
 " New, 324
 Daisy, English, 134
 Daphne Fortunei, 70
 Dark-leaved Norway Maple, 230
 Darlingtonia California, 243, 277, 314
 " Leaves Twisted, Why, 245
 Darwin and Bryant, 124
 Day in California, a, 283
 " Lily (Hemerocallis), 327
 Death of Andrew Murray, 94
 " Dr. H. A. Swasey, 318, 349
 " J. P. Kirtland, 63
 " James Fleming, 252
 " J. H. McFay, 221
 " Jno. Nicholas Haage, 218
 " T. B. Miner, 283
 " Thos. J. Mackenzie, 63
 " Thos. Rivers, 31
 " Wm. C. Flagg, 169
 Decoration, Floral Table, 201
 " Room, Leaf-plants for, 102
 Decorations, Floral, 12, 63
 " Winter, 43
 Decorative Purposes, Red Beet for, 102
 Deep Planting of Bulbs, 295
 Dendrobium nobile, versus Novelities, 232
 Dennett, Col. Danl., 349
 Dientra, California, 164
 Dioscorea batatas, or Chinese Potato, 37
 Diospyros Kaki, or Japanese Persimmon, 79
 Diseased Peach Leaf, 209
 Disease, Fungi and, 87
 " in Euonymus latifolius, 3
 " in Marchal Nell Rose, 3, 41, 72, 200
 " Quince, 240
 District of Columbia Horticultural Society, 256
 Dogwood, Scarcity of, 19, 50
 " Swamp, 181
 " Timber, 148
 Double Amaryllis, 119, 160, 233
 " Flowered Cinerarias, 236
 " Flowered Escholtzia, 229
 " Geraniums, 362
 " Leaf in Begonia, 246
 " Richardia, 304
 " Scarlet Gem, 328
 " Mexican Lily, 333
 " White Oleander, 76
 Dryers, Good Fruit, 238
 Drying Fruits and Vegetables, 146
 Dubuque, Iowa, Floral Association, 224
 Duke of Edinburgh, Azalea, 303
 Dutch Bulbs in the South, 129
 Dwarf Apple Stocks, 17
 " Crested Coxcomb, 43
 " June Berry, 87, 141, 176, 185, 205, 237, 303, 306, 350
 " Pyracantha, 167
 Dyehouse Cherry, 240, 307
 E Early Beatrice Peach, 307
 " Peaches, 238, 272
 " Season, The, 178
 East India Millet, 81
 Edible Pot-Halls, 240
 Editorial Notes, 4, 9, 14, 22, 26, 30, 37, 42, 47, 50, 52, 55, 64, 69, 74, 81, 84, 87, 91, 95, 102, 107, 111, 113, 116, 120, 125, 133, 139, 145, 148, 152, 156, 167, 174, 178, 182, 184, 187, 192, 197, 203, 208, 210, 214, 218, 222, 229, 233, 238, 242, 245, 249, 253, 261, 267, 272, 275, 279, 280, 285, 293, 303, 309, 313, 317, 319, 325, 331, 338, 343, 344, 347, 351, 363, 377
 Editor, European Notes by the, 26, 55, 91, 120, 156, 187, 218, 253
 " Traveling Notes by, 249
 Elm, Byfield, 129
 " Slippery, 129
 " Thick-leaved, 134
 " Weathersfield, 142
 Endurance of Seeds of Tender Things, 216
 England, Asparagus in, 239, 336
 " Horticultural Exhibition in, 353
 " Peaches in, 310
 " Public Parks in, 69
 " Tea Roses in, 174
 English Daisy, 134
 " Flower Pots, Sizes, 41
 " Gooseberries, New, 81
 " Importations of Fruit, 272
 " Ivy Wild, The, 150
 " Names, Mixing, 29
 " Primrose, 38
 " Sparrow, 152
 " Sparrow and Seeds and Fruits, 344
 Enough of a Good Thing, 178
 Epidendrum, 263
 Epiphyllum truncatum, Growing, 109
 Eradicating Rare Plants, 346
 Errors, Typographical, 281
 Eryngium Leavenworthii, 70
 Escholtzia, Dbl.-flowered, 229
 Escholtzias, New, 38
 Eucalyptus, 84, 211, and Therapeutics, 86
 " at Norfolk, Va., 113
 " Fire-wood, 85
 " Hardiness of the, 15, 115
 " in Algiers, 18
 " in India, 18
 " in Memphis, Tenn., 275
 " in Virginia, 147
 " Timber, 18
 Eucharis Amazonica, 293
 Eulalia, Japonica, Zehra, 328
 Euonymus latifolius, Disease, 3
 " Standard, 69
 Euphorbia, Injury From, 23
 European Notes by the Editor, 26, 55, 91, 120, 156, 187, 218, 253
 " Sketches, 253
 Europe, Forest Commissioners, 51
 " Fruit in, 310
 " Potato Beetle in, 88
 Evergreens, Preservation of Leading Shoots of, 100
 Experiments in Testing Seeds, 345
 F Fall Apples, 310
 " Blooming of Apple Trees, 82
 Farmers and Gardeners, 191
 " For, 282
 " Magazine, 29
 Fast Budding, 336
 Felling Trees, 274, 341
 Fermentation, Pasteur's Theory of, 346
 Ferns, American and Hardy, 252
 " in Their Homes and Ours, 318
 " of Kentucky, 252
 " of North America, 53
 Ficus parcelli, Fruiting of, 305, 358
 " Various Species of, 358
 Fig in Ohio, 48
 Fig Tree, Barrenness in the, 85
 Filmore Strawberry, 238
 Fine Grapes, 365
 Fire-wood, Eucalyptus, 85
 First Horticultural Magazine, 192
 Flagg, Wm. C., Death of, 160
 Flax Blight, 23
 Fleitas St. John Peach, 238
 Fleming, James, Death of, 252
 Floral Association, Dubuque, Iowa, 224
 " Decorating, 12, 63
 " Decoration, Table, 201
 Florida, Advantages and Disadvantages of, 373
 Flower, a Christmas, 153
 " Beds, Watering, 259
 " Garden and Pleasure Ground, 1, 33, 65, 97, 129, 161, 193, 225, 257, 289, 321, 353
 " Gardena, 205
 " Pots, English, Sizes of, 41
 Flowering of the Rhipsalis bellifloris, 266
 Flowers at Paris, Trade in, 350
 " Butterfly, 76
 " in Milwaukee, 76
 " Wild, Royal Love for, 347
 Fly-trap, Venus', 332
 Foliage Plants for Window Culture, 170
 Forcing Asparagus in Paris, 16
 Forest Commissioners to Europe, 31
 " Corporations, 275
 " Culture, Profits of, 366

- Forestry, 18, 50, 83, 113, 146, 180,
210, 241, 274, 312, 341, 365
" American, 30, 313
" " at Paris, 113
" Journal of, 349
" in Portugal, 242
" in Southern Kansas,
180
" of Ohio, 51
" Profit of, 114
" Report Upon, 212
France, American Vines in, 112
" Pears in, the Most Popu-
lar, 112
Fraud, a Small, 190
Fred, John, 221
French Notes, 192
Fruit and Vegetable Garden-
ing, 12, 45, 77, 109, 140,
175, 205, 236, 269, 305, 334, 364
" Culture for Market, 82
" in Alabama, 15
" in Europe, 310
" in Kansas, 271
" " Texas, 111
" Revenue from, 64
" Dryers, Good, 238
" English Importations of,
272
" Growers Ass'n, Ontario,
Canada, 224
" Growing in Penna., 365
" Notes From California, 78
" of Japan Persimmon, 113
" Prospects at Boston, 180
" Trees, a Good Way to
" Work Over Large, 337
" Trees, Coal Tar on, 272
" Trees, Oil for, 115
" What is, a, 87
Fruitful Strawberry, Philoso-
phy of, 214
Fruiting of Akebia, 326
" of Ficus parcelli, 305
" " 358
" of Stapelia, 345
" of Wistaria sinensis,
215
Fruits and Vegetables, Drying,
146
" Bahama, 350
" in California, 15
" in Iowa, 305
" New and Valuable, In-
troduction of, 30
" New in New Hampshire,
364
" " Notes on, 144, 176
" " or Rare, 16, 49, 82,
112, 204, 208, 310, 340
" " Patenting, 28
" Ripening of, 117
" Small, 306
" Tropical, 49
Fuchsia, 252
" racemosa, 11
Fumigating Greenhouses, 303
Fungi and disease, 87
Fungus Spawn, 279
- G**
Garden, Californian, 166
" Pretty City, 326
" Room, 174
" What is, a, 194
Gardens and Gardening in
Austin, Texas, 356
Gardeners and Farmers, 191
" Why They Should
" Marry, 124
Gardening in America, 377
Gardening in Norfolk, 167
" longivity, 221
Gall on Wild Cherry Leaf, 186
" Rose, 186
Gardenia Flower, 204
Geo. A. Stanley, Abolition, 264
Georgia, Cherry Culture in, 238
" Early Cherries in, 239
" Peach, the First, 208
" Pears, 339
- Georgia State Hort. Society, 224
Geranium, a Fine, 9
" and Pelargonium, 252
" Archbishop Wood, 45
" 305, 358
" Bishop Wood, double
" 7, 8
" Guillon Mangellon,
305, 358
" New Life, 130
" Roots, Ants on, 280
" Summit of Perfec-
tion, 44
Geraniums and Snakes, 214
" Double, 362
" New, 76
" " Ralph and Fanny,
135
German and American Globe
Arboretes, 67
Germantown Hort. Society, 192
" Gymnocladus in, 372
Gerns, Yellow Fever, Sulphur
and, 345
Geum, Dark sariet, 328
Gladiolus, Hardy, 230
Glass, Grape Culture Under, 13
" Panels, 298
" Glazing, 9
Gloxinias, Semi-double, 75
Good Way to Work Over Large
Fruit Trees, 337
Gooseberries, Grafting Stocks
for, 179
" New English, 81
Gooseberry, Seedling, 274
Grafting, New Varieties by, 184
" Rooted Eyes, 81
" Stocks for, 70, 179
Grape Borders, Outside, 83, 142,
341
" Black Hamburg, 16
" Burnett, 50
" Chat, 47
" Culture in Texas, 271, 337
" Culture Under Glass, 13
" Growing, Profit of 112
" Monukka, Hybridiza-
tion of, 16
" Moore's Early, 365
" Prentiss, 365
" Rot, Phylloxera and, 48
" Vine, Insects on, 273
" Prentiss, 340
" Welcome, New Foreign,
310
Grapes and Graperies, 311
" Fine, 365
" Growing in Vineries, 208
Grass Burner, Mennoite, 171
" Lawn, 199, 263
" Orchards in, 47
" Pears in, 140
Gray, Prof. Asa, 252, 318
Greenhouse and House Gard-
ening, 6, 39, 71, 103, 134,
167, 206, 230, 263, 295, 328,
358
Greenhouse, Aspect of, a, 77,
203
" Span or Lean-to,
205
Greenhouses, Fumigating, 303
" Heating Small, 9
" Small, 299
Green Maure, 359
Grey Pine, 293
Grounds, Agricultural, 212
Growing Ephyllum truncatum,
109
" " Richardi Ethiopica, 8
Growths, Abnormal, 216
" of a Marchal Niel
" Rose, 267
" Timber, Rapidity of,
84
Guillon Mangellon Geranium,
305, 358
Gumbo, 273, 364
" The True, 336
Gum, Persimmon, 182
Gymnocladus in Germantown,
372
- H**
Haage, Jno. Nicholas, death of,
318
Hairs of Plants, 185
Handsome Leaved Pear Tree,
5
Hardiness in Winter, Influence
of Summer on, 338
" of Eucalyptus in
Philadelphia, 18
Hardy Catalpa Trees, 242, 366
" Colorado Firs and
Spruces, 242
" Ferns, 251
" Gladiolus, 230
Heating Small Greenhouses, 9
Heat, Internal, of Plants, 117
" Specific in Trees, 117
Hedge Plant, Purple Beech as
a, 293
Heliotrope, Winter, 102
Hellebore Powder, 332
Hemerocallis, 327
Hibiscus (Rosa sinensis) alba
variegata, 38
" (Rosa sinensis) car-
minata perfecta, 38
" (Rosa sinensis) mini-
ata semi-plena, 38
Hide-bound Trees, 17
Highland Hardy Strawberry, 14
Hints, Seasonable, 1, 6, 12, 33,
39, 45, 65, 77, 97, 225, 227,
269, 289, 295, 321, 328, 334, 353,
357, 364
History of the Weeping Wil-
low, 119
Hog, Management and Diseases
of, 348
Hollies, Transplanting, 199
Hollywood at Long Branch, N.
J., 322
Homes, Country, 292
Honest Man, an Exceptionally,
191
Honeysuckle, Belgian, 263
Hoosie Thornless Blackberry,
337
" " Raspberry,
13
Hornet Raspberry, 273
Horticultural and Pomological
Association,
Texas, 256
" Catalogues, 125
" Exhibition, Bel-
gium International,
224
" Exhibition in
England, 352
" Exhibitions,
Nurserymen
and, 352
" Importations, 124
" Magazine, the
" First, 192
" Paper, Value of, a,
28
" Societies, 30, 63, 95,
125, 192, 222, 253,
285, 319, 351, 378
" Society, Dist.
" Columbia, 256
" Society, Georgia
State, 224
" Society, German-
town, Phila-
delphia, 192
" Society, Indiana
State, 378
" Society, Kansas
State, 63
" Society, Ken-
tucky, 128, 256
" Society, Mary-
land, 128, 224,
352
" Society, Mass., 31
128, 159, 288, 319
" Society, Minne-
sota, 124
" Society, Mont-
gomery Co., Ohio, 96
- Horticultural Society, Ne-
braska State, 94
" Society, New Jer-
sey State, 320
" Society, New
York, 128, 192
" Society, Ohio, 96
256
" Society, Penna.,
32, 192, 223, 351
" Society, S.C. State,
32
" Society, South
Eastern Kan-
sas, 95
" Society, Western
N. Y., 224
" Society, Wiscon-
sin State, 224
Horticulture and American
Forestry at
Paris, 113
" " at the Paris Ex-
hibition, 159
" " in Baltimore, 318
" " California, 128
" " Japan, 133
" " Maryland,
284, 317
" " Rapid Progress
of our, 67
Horticulturist, Canadian, 160
Hotels, Japanese, 5
Hot Water for Mealy Bug, 41
Houstonia Cerulea, 229
How the Root Grows, 346
Hyacinth Blooming, 76
" Culture, 331
" Antipodal, 72
Hybridization of the Monukka
and Black Hamburg
Grapes, 16
Hybridizing and Crossing, 279
" Wheat, 373
Hybrids in Nature, Abstract
of Paper on, 344
Hybrid Graft Apples, 371
" Strawberry, 206
" Tropaeolum, 5
Hydrangea, Climbing, 356
Hydrangeas, 292
" Beautiful, 295
Hypericum Pyramidalum, 262
- I**
Illustrated Annual of Rural
Affairs, 62
Imatophyllum, 133
Importation, Horticultural, 124
Improved Abolitions, 333
India, Eucalyptus in, 18
Indiana State Hort. Society, 378
Infant Form of Leaf, 311
Injury from Euphorbia, 23
Insectivorous Plants, 153
Insect Powder, 349
" Strawberry, Destruc-
tive, 365
" Strawberry Leaf, 311
" Traps, 239
Insects on the Grape Vine, 273
" Remarks on, 29
" Wages of, 22
International Exhibition, Aus-
tration, 350
Iowa, Fruits in, 305
Ironwood, 89
Ivy in New England, 67
" Scale on the, 44
" Wild, English, 150
- J**
Jamaica, Cinchona in, 84
Japanese Mushrooms, 39
" Persimmon, Hospy-
ros Kaki, 79, 115, 145
Japan, Horticulture in, 133
" Pines of, 229
" Quince, 355

Japan, Wrapping around Lily Buds, 216
Jardinieres, Window Boxes and, 265
Jasmine, Virginian, 251
Jumping Beans of Mexico, 88, 213
Juneberry, Dwarf, 87, 141, 176, 186, 205, 237, 305, 306, 350
Juniper, Worm on the, 70

K

Kansas, Early Peaches this year in, 272
" Fruit Culture in, 271
" Southern, Forestry in, 180
" State Horticultural Society, 63
Kentucky Coffee Tree, 325
" Horticultural Society, 128, 256
" Labor and Wages in, 240
Killing Mealy Bug, 136
Kinneman's Seedling Peach, 240
Kirtland, Dr. J. P., Death of, 63

L

Labor and Wages in Kentucky, 240
Lady Washington Pelargoniums, 174
Lady's Wheelbarrow, a, 193
Laelias, 230
" Brazilian, 232
" Mexican, 231
Lanum Purpureum, 133
Large Asparagus, 281
" Catalpa, 243
" Chestnut Tree, 182
" Peaches, 339
" White Oak, 242
Late Strawberry, 309
Lawn Grass, 195, 263
Lawns, 35
" Picturesque, 227, 257
Laws Against the Yellows, 24
" Post Office, 154, 347
Layers, Propagation by, 229
Leaf, Cabbage, Curious, 246
" Gall on the, 186
" Infant Form of, 277
" Plants for Room Decoration, 108
Leaves, Skeleton, How to make, 267
" Twisting in Darlingtonia, Why, 314
Lention Verberna, 293
Lent, Wood, 19
Lent Lilies, 174
Lentocnium roseum, 295
Liberian Coffee, 87
Light for Tropical Plants, 88
Lightning and the Beech Tree, 186, 343
" and Trees, 372
" Proof Beech Trees, 245
" Rods, 246
Lilac, Persian, 233
Lilies, Lent, 174
Lilium auranti, 323
" White, 262
" Krameri, 133
Lily, Belladonna, 303
" Buds, Japan wrapping around, 216
" Day, (Hemerocallis), 327
" Mexican, Double, 333
" Victoria, 33
Lime for Apple Orchards, 17, 81, 110
" Orchids, 112
Linseed Oil for Pear Trees, 83
Linum perenne, 116

Literature, Travels and Personal Notes, 24, 53, 90, 119, 154, 187, 217, 247, 280, 317, 347, 374
Lobelia, White, 327
Locust, Black or Yellow, 149, 270, 211
" Timber, 343
" Tree, 342
London Florist and Pomologist, 94
Long Branch, N. J., Holywood at, 322
Longevity, Gardening, 221
Longworth Prolific Strawberry, 239
Luculla gratissima, 139, 202, 234
" Pinciana, 234

M

Mackenzie, T. J., Death of, 63
Mahaleb Stocks, 145
Malacotum Peaches, 308
Manmoth Trees of California, 149
Manetti Stock, Roses on, 37
Manure, Green, 339
Maple, Norway, Blood-p'd, 229
" Dark-p'd, 230
Marchal Niel Rose, Disease in, 3, 41, 72, 200
" " Growth of, 267
Market, Fruit Culture for, 82
Maryland Horticultural Society, 128, 224, 352
" Horticulture in, 254, 317
Massachusetts, Agricul. Club, 256
" Hort. Society, 31, 128, 159, 238, 319
" Premiums for Tree Planting, 148
Mealy Bug, 41
" Additional Note on, 232
" Alcohol for, 41
" Cure for, 12, 202
" Hot Water for, 41
" Killing, 136
Medinella, 139
" magnifica, Culture of, 139
Melbourne Botanic Garden, 94
Memphis, Tenn., Eucalyptus in, 275
Mennonite Grass Burner, 171
Mexican Laelias, 231
" Lily, Double, 333
Mexico, Jumping Beans of, 88, 213
McAfee, J. H., Death of, 221
Michigan, Apple from, 14
" State Pomological Society, 351
Mignonette, Native Place of, 344
Millett, East India, 81
Miltonia, 136
Milton, Ky., Peach Crop of, 240
Milwaukee, Wis., Flowers in, 76
Miner, T. B., Death of, 283
Minnesota Hort. Society, 124
" Tree Planting in, 114
Mississippi, Best Apples for, 48
Misato, Apples for, 81
Mistletoe, How to Propagate, 326
Mixing Oil and Water, 29
" up English Names, 29
Modus operandi of the Darwinian, 243
Moles, About, 68
Montgomery Co., Ohio Hort. Society, 96, 256
Moore's Early Grapes, 365

Moore's Rural Life, 252
Moss Baskets, How to Make, 332
Moth, Codling, Destroyers, 310
Mound Making Ants of the Alleghenies, 94
Mountain Ash, Seedless, 118
Move, A Good, 118
Moving Large Trees, 6
Mowing the Leaves of Strawberries, 273
Mulching, Blunders and, 226
Murderous Plant, Darlingtonia Californica, 243
Murry, Andrew, Death of, 94
Mushrooms, Japanese, 339
Music, 29

N

Names, English, Mixing, 29
" of Plants, 230, 233
" " Common, 22
Nashville, Tenn., Arboretum at, 152
Native Flowers and Ferns of the U. S., 221
" Place of Mignonette, 344
" Sumac, 343
Natural History and Science, 19, 51, 85, 115, 150, 183, 213, 243, 277, 314, 343, 368
" Transplanting, 51
Nature, Hybrids in, Abstract of Paper on, 344
Nebraska State Hort. Society, 94
Necrology, 126
Neglected Orchards, 146
Neglecting Orchard Trees, 81
Nertera depressa, 302, 360
New American Fruits, and Valuable Introduction of, 30
" Cherry, 270
" Dahlias, 324
" Early Peaches, 236
" England, Ivy in, 67
" Weeping Willow in, 154
" English Gooseberries, 81
" Escholtzias, 88
" Fashion in Cut-flowers, 74
" Foreign Grape, Welcome to, 310
" Fruits in New Hampshire, 364
" Fruits, Patenting, 28
" Notes on, 144, 176
" Geraniums, 76
" Jersey State Horticultural Society, 320
" Late Peaches, 340
" Life Geranium, 139
" or Rare Fruits and Vegetables, 16, 49, 82, 112, 204, 208, 310, 340, 365
" or Rare Plants, 5, 9, 38, 43, 69, 75, 103, 109, 134, 229, 234, 239, 262, 267, 305, 308, 328, 333, 362
" Product From the Pine, 18
" Race of Chrysanthemums, 6
" Regal Pelargonium, Mrs. John Saul, 109
" Source of Profit, 339
" Stock for the Pear, 206
" Varieties of Grafting, 184
" York, Weather in, 52
" Zonale Pelargonium, Dr. Denny, 234
Nierenbergia rivularis, 229
Nomenclature, 96
Norfolk, Gardening in, 167
" Va. Eucalyptus at, 113
North America, Ferns of, 53
" Carolina, Trees in, 149
" West, Pear Culture in, 178

Northern Range of the Willow Oak, 148
" Spy Apple, 81
Note on Mealy Bug, Additional, 232
Notes, European, by the Editor, 26, 55, 91, 120, 156, 187, 218, 253
" French, 152
" For 1877, 160
" From Oregon, 86
" on Ailanthus, 68
" on Culture of Native Plants, 166
" on New Fruits, 144, 176
" on October Monthly, 355
" on Orchids, 200
" on Raspberries, 109
" on Tree Planting, 149
" Traveling by the Editor, 249
Novelties, Protection to, 54
" versus Dendrobium noble, 232
Norway Maple, Blood-leaved, 229
" Dark-p'd, 230
Nurserymen and Horticultural Exhibitions, 352
Nursery Trees, Personal Property, Are, 378
" Visits, 350

O

Oak, Bartram, 134
" Staves, 149
" White, a Large, 242
" Willow, 113
" Northern Range of, 148
Obituary, 31, 63, 94, 126, 160, 221, 252, 283, 318, 349
October Peaches, 339
" Monthly, Notes on, 355
Odontoglossum, 136, 137
Ohio, Andromeda arborea in, 372
Ohio Apple, 150
" Fig in, 48
" Forestry of, 51
" Horticultural Society, 96
Oil and Water, Mixing, 267
" for Fruit Trees, 115
" Olive, 339
Oiled Sheet, 269
Oleander, Double White, 76
Olive oil, 339
Oncidiums, 103
Ontario, Canada, Fruit Growers Association of, 224
Orchards, Black Walnuts and, 182
" in Grass, 47
" Lime for, 112
" Neglected, 146
" Notes on, 200
" Trees, Culture of, 273
" Neglecting, 81
Orchideae, Cool-house, 39, 230
Orchid Culture, 42, 329
" in the U. S., 3
" Progress of, 174, 296
" Growers, Among the, 189, 200
Orchids, 234
" Amaryllis and, 301
" Among the, 134
" With Other Plants, 71, 103
Oregon, Notes from, 86
" to Washington, From, 187
Oriental Plane Tree, 4
" Spruce, 69
Origin of the Prairies, 185
Ornamental Vines, Window Hood for, 325
Our Chrono, 347
" Last Volume, 28
Outside Grape Borders, 83, 142, 341
Ovi-viviparous Creatures, 371

- P**
- Packing and Transportation, Improvement in, 31
- Panels, Glass 298
- Pansy, Portulacae or Heart's Ease Pictures, 247
- Parasite on the Codling Moth, 185
- Paris, American Forestry and Horticulture at, 113
- " Exhibition, Horticulture at, 159
- " Flowers at, Trade in, 350
- Park Commission, Baltimore, 159
- " Trees, Protecting from Cattle, 293
- Parks, Something about, 23
- Perry, Dr. C. C., 63
- Pasteur's Theory of Fermentation, 346
- Patenting New Fruits, 28
- Peach, Alexander, 307
- " Amesen's June, 307
- " Bower's Early, 240
- " Burns, 274
- " Crop of Milton, Ky, 240
- " Early Beatrice, 307
- " Fleitas St. John, 238
- " Georgia, the First, 208
- " Growing South, 238
- " Kinnaman's Seedling, 240
- " Leaf, Curl of, 315
- " Leaf Diseased, 209
- " Sallie Worrell, 311
- " Thompson's Orange, 273
- " Time to Bud, 308
- " Vagaries of the, 337
- " Wilder, 335
- " Yellows, Laws Against, 24
- Peaches, Early, 238
- " " in Kansas, 272
- " " in England, 310
- " Late, 339
- " Malacotone, 308
- " New Early, 236
- " New Late, 340
- " October, 339
- " Texan Early, 339
- Pear, a remarkable, 177
- " Blight, 116
- " Bonne du Puits Anaults, 340
- " Clapp's Favorite in Canada, 178
- " Cracking of the, 52, 111
- " Cure for, 203
- " Culture, 110
- " " in the North-west, 178
- " Leaf Blight in the, 208
- " New Stock for the, 236
- " Prickly, 23
- " Rescue, 49
- " Slug, 180
- " Souvenir du Congres, 178
- " Tree, Blight in the 141
- " " Handsome leaved, 5
- " " Philadelphia, Beauty of the, 43
- " Trees, Lined Oil for, 83
- " " Slitting the Bark of, 178
- Pears, Clapp's, 311
- " " in Georgia, 339
- " " in Grass, 140
- " " in France, The Most Popular, 112
- " " in the West, 341
- " Marketing of, 288
- " Quality and Culture of, 143, 175
- Pelargonium and Geranium, 252
- " Lady Washington, 174
- " Mrs. Jno. Saul, 109
- " Variegated, 174
- " Zonale, Mrs. Denry, 234
- Pennsylvania Apples, Popular, Fruit Growing in, 365
- " " 310
- " " Hills of, 152
- " " Hort. Society, 32, 192, 223, 351
- Pentstemon coccineus, 65
- Persian Lilac, 293
- Persimmon Gum, 182
- " Japan, 79, 115, 146
- " Fruit of, 113
- Personal Property, Are Nursery Trees, 378
- Peter Henderson Carnation, 11, 44
- Phenomenon, Strawberry, 16
- Philadelphia, Apples in, 14
- " Fairmount Park, Ann. Report, 280
- " Hardiness of Eucalyptus in, 18
- " Pear Tree, Beauty of, 48
- Philodendron aureum, 38
- Philosophy of a Fruitful Strawberry, 214
- Phloxes, Specimen, 333
- Phylloxera, 145
- " and Grape Rot, 48
- Picea acicularis, 5
- " Engelmanni, 19
- " or Abies, Which is it, 51, 185
- Pickeringia Montana, 68
- Picturesque Lawns, 227, 257
- Pike's Peak, Ascent of, 374, 377
- Pine, a new Product from, 18
- " Grey, 285
- " Apples, Bahama, 378
- " Lumber of Utah, 182
- " Red, 313
- " Tree, Utilizing the, 212
- " Yellow, 84
- Pines, Austrian and Scotch, 328
- " of Japan, 229
- Pinus aristata, 118
- " Bourseri, 23
- " glabra, 130
- " ponderosa, 245
- Plant, a Murderous, 243, 277, 314
- " Coral, 472
- " Culture in the West, 43
- " Curious, 363
- " Protection, 25, 90, 119
- " Robin Hood, 186
- Planting Seeds and Seed, 260, 290
- Plants, Alpine, 34
- " Australian, Beautiful, 43
- " Bedding, How May be Arranged, 34, 193
- " Bible, 283
- " Carnivorous, 87, 116, 368
- " Common Names of, 22
- " Hairs of, 185
- " Insectivorous, 153
- " Internal Heat of, 117
- " Names of, 230, 283
- " Native, Notes on culture of, 166
- " Old, Cultivating, 43
- " or Seeds from Other Localities, 118
- " Small, Watering, 139
- " Vegetable, 94
- " Winter Decorative, 74
- Ploughing Among the Roots of Trees, 179
- Pomological Literature, 125
- " Society, American, 120, 192
- " Society, Michigan State, 351
- Poplars, American, 116
- " Abelis or Aspens and Cottonwoods, 20, 21
- Portugal, Forest in, 242
- Post Office Laws, 154, 346
- " Ruler Anger, 124
- Potato, Abnormal Growth, 216
- " " Curious Growth, 369
- " Beetle, Colorado, Remedy for, 216
- Potato Beetle in Europe, 88
- " Blossoms, Taking off, 116
- Powder, Insect, 349
- Prairies, Origin of the, 185
- Preservation of the Leading Shrubs and Evergreens, 100
- Preserving flowers of Night-Blooming Cereus, 253
- Prentiss Grape, 340, 365
- " Prickly Comfrey, 372
- " Pear, 23
- Pride of the Hudson Raspberry, 48
- Primrose, Blue, 295
- " Chinese, 204, 359
- " English, 38
- Primroses, Chinese Double, 43
- Prinquia Japonica, 261
- " varieties of, 103
- Prof. Ed. Pyraet Strawberry, 16
- Profitable Cherries, 210
- Profit, New Source of, 339
- " of Forestry, 114
- " Grape Growing, 112
- " of Forest Culture, 366
- Progress of Orchid Culture in the U. S., 174, 296
- Propagate Mistletoe, How to, 326
- Propagation by Layers, 229
- Protecting Park Trees from Cattle, 293
- Protection, Plant, 25, 90, 119
- " to Novelties, 54
- Pruning the Old Canes of Raspberries, 83
- Public Work, Trees for, 62
- Puff Balls, Cooking, 13
- Gables, 13
- Purple Beech as a Hedge Plant, 293
- Pyraeantha, Dwarf, 167
- Pyralide, North American, Preliminary Studies on 345
- Q**
- Quality and Culture of Pears, 143, 175
- Quercus heterophylla, 167
- " phellos and Q. falcata, 83, 113
- Quince Disease, 240
- " Japan, 355
- R**
- Raisins, California, 339
- Ralph & Fanny Geraniums, 135
- Raphis flabelliformis, Flowering of, 266
- Rapid Progress of Our Horticulture, 67
- Rare Plants, Eradicating, 346
- Raspberries, Another Word on, 207
- " Hoosic Thornless, 13
- " Notes on, 109
- " Pruning Old Canes of, 83
- Raspberry, Highland Hardy, 14
- " Horset, 273
- " Pride of the Hudson, 48
- Red Beet for Decorative Purposes, 102
- " Pine, 313
- Red Wood, 19
- Red Wood in Australia, 313
- Remarkable Pear, a, 177
- Remedy for Potato Beetle, 216
- Report Upon Forestry, 212
- Reproductive Forces, The, 152
- Rescue Pear, 49
- Restoring dead Seeds, 24
- Revenue from Fruit Culture, 64
- Rheum nobile, H-zoker, 38
- Rhododendron Borer, 24
- " Occidentale, 227
- " Occidentalis and Pickeringia Montana, 68
- Rhododendrons, 197
- Robert's Portable Terra-cotta Dry Stove, 239
- Robin Hood Plant, 186
- Rondeletia anomala, 304
- Room Garden, a, 174
- Rooted Eyes, Grafting, 81
- Root, How it Grows, 346
- Roots of Trees, Ploughing Among, 179
- " Submerged in Winter, 87
- Rose, Christmas, 192
- " Gall, 186
- " List, Comparative, 130, 162
- " Marechal Niel, Disease on, 3, 41, 72, 200
- " Marechal Niel, Growth of, 267
- Roses, All About, 199
- " Blooming to the Ground, 101
- " " In Round Baskets, 326
- " " On Manetti Stock, 37
- " " Tea in England, 174
- Rosy Snowflake, The, 295
- Royal Love for Wild Flowers, 347
- Rural New Yorker, 125, 222
- S**
- Sabbatia angularis, Cross Fertilization in, 278
- Sallie Wdrell Peach, 311
- Saratoga, N.Y., March Weather at, 152
- Saul, Mrs. John, Pelargonium, 109
- Scale on the Ivy, 44
- Scarcity of Dogwood, 19, 50
- Science in Dept. Agriculture, 160, 191
- " Observer, 62
- Scraps and Queries, 6, 11, 17, 19, 24, 29, 44, 52, 63, 70, 76, 82, 89, 109, 115, 134, 139, 146, 145, 152, 174, 179, 182, 186, 192, 199, 204, 209, 212, 215, 260, 236, 240, 246, 254, 263, 269, 273, 275, 280, 295, 304, 311, 328, 341, 343, 363, 365, 368, 372, 378
- Scraps from a Brazilian Journal, 217
- Scribner Spitzbergen Apples, 49, 82
- Season, the Early, 178
- Secular Change of Vegetation, 18
- Seeding of Wistaria Sinensis, 184
- Seedless Mountain Ash, 118
- Seedling Abutilons and Cereus grandiflora, 358
- Seedling Gooseberry, 274
- " Strawberry, Crescent, 270
- " Verbenas, 140
- Seeds and Seed Planting, 260, 290
- " of Tender Things, Endurance of, 216
- " or Plants from Other Localities, 118
- " Testing, Experiments in, 345
- " " Old, 49
- " Restoring Dead, 24
- Seeds Vitality of, 246
- Selaginella Japonica, 262, 354
- Semi-double Gloxinias, 75
- Sense of Propriety, a, 328
- Service Berries, 112
- Shade for Apple Trees, 336
- Shade Trees of Washington, 37
- Sharpless Seedling Strawberry, 239, 306, 340

- Sheeting, oiled, 269
 Shittim Wood, 29, 63
 Skeleton Leaves, How to make, 267
 Slippery Elm, 129
 Slitting Bark of Trees, 117, 178
 Slug, Pear, 1, 306
 Small Fruits, 306
 " Greenhouses, 299
 Smith, Benjamin G., 350
 Snails 11
 Snakes and Geraniums, 214
 Snowdrops, Stealing, 191
 Snow Plant of California, 345
 Soil Texture, Relation of, to
 " Timber Growth, 147
 Solanum dulcamara, 195
 Something About Parks, 23
 South, Dutch Bulbs in, 129
 " Carolina State Horti-
 cultural Society, 32
 " Eastern Kansas Horti-
 cultural Society, 95
 " Peach Growing in, 238
 Southern States, Culture of
 Coffee in, 15
 Souvenir du Congrès Pear, 178
 Spanish Chestnut, 84
 Span or Lean-to Greenhouse,
 205
 Sparrow, English, 152
 " and Seeds and
 Fruits, 344
 Spawn Fungus, 279
 Specimen Phloxes, 333
 Speciosa Catalpa, 368
 Spirea Japonica, 5
 " palmata elegans, 70
 Spruce, Oriental, 69
 Stapelia, Fruiting of, 345
 " Structure of, 370
 Staves, Oak, 149
 Stealing Snowdrops, 191
 Stephanotis floribunda, 74
 Stigmaphylla ciliatum, 302
 Stock, New, for the Pear, 206
 Stocks, Blight-proof, 81
 " for Grafting, 70
 " Goosecherries,
 179
 " Mahaleb, 145
 Stove, Robert's Portable Terra-
 Cotta, Dry, 269
 Strawberries, Hybrid, 206
 " Late, 309
 " Mowing the
 Leaves of, 273
 " Watering, 240
 Strawberry, Apple, the Che-
 nango, 110
 " Crescent Seedling,
 104, 209, 270, 310
 " Cultivation of, 307
 " Filmore, 238
 " Fruitful Philoso-
 phy of, 214
 " Insect, Destructive
 365
 " Leaf Insect, 311
 " Longworth Prolific
 239
 " Phenomenon, 16
 " Prof. E. Penner, 16
 " Sharpless Seedling,
 239, 306, 340
 Sturtia Virginica, 261
 Stump Apple, 17
 Sulphur and Yellow Fever
 Germs, 345
 " Use of, 144
 Sumac, Native, 343
 Summer Apples, 310
 " Influence of on Har-
 diness in Winter, 338
 Summer Shade for Apple Trees
 336
- Summit of Perfection, Gera-
 nium, 44
 Sun-dial, Place for the, 350
 Swamp Dogwood, 181
 Swasey, Dr. H. A., Death of,
 318, 349
 Swayzie Pomme de Grise Ap-
 ple, 203
 Sweet Potato, Botanical Name
 of, 118, 153
 Switzerland, Tree Planting in,
 275
 Sycamore Timber, 148
 Sylviculture, 62
 Synoptical Flora of U. S., 221
 Syracuse, Oakland Cemetery, 139
- T**
- Tea Culture in the South, 148
 " Plants at Washington, 210
 " in California, 48
 Teosinte reana luxurians, 82
 Testing Old Seeds, 49
 " Seeds, Experiments in,
 345
 Texan Early Peaches, 339
 Texas, Fruit Culture, in 111
 " Grape Culture in, 271, 337
 " Hort. and Pomological
 Association, 256
 Thanks, 350
 Therapeutics, the Eucalyptus
 and, 86
 Thomson's Range Peach, 273
 Thrips, Cure for, 294
 " on Azaleas, 45
 Tiles, Wood, 330
 Timber, Catalpa, 51, 114, 146
 " Cherry, 211
 " Value of, 149
 " Dogwood, 148
 " Eucalyptus, 18
 " Fast Growing, Value of,
 148
 " Growth, Rapidity of, 84
 " Growth, Relation of
 Soil-texture to, 147
 " in California, 211
 " Locust, 343
 " Sycamore, 148
 Torenias, 8
 Tovarita Oleracea, 229
 Transplanting Hollies, 199
 " Natural, 51
 Traps, Insect, 239
 Traveling Notes by Editor, 249
 Tree, Catalpa, 148
 " Cherry, Large, 18
 " Construction of, 89
 " Locust, 342
 " Oriental Plane, 4
 " Planting in Minnesota,
 114
 " in Switzerland,
 275
 " Massachusetts,
 Premiums for,
 148
 " Notes on, 149
 Trees, Big, in Australia, 149
 " Felling, 274, 341
 " for Public Work, 62
 " Hide-bound, 17
 " in Large Cities, 261
 " in North Carolina, 149
 " Lightning and, 372
 " Mammoth of California,
 149
 " Moving, Large, 6
 " of Washington, 69
 " Orchard, Culture of, 273
 " Ploughing Among the
 Roots of, 179
 " Shade, of Washington, 37
- Trees, Slitting Bark of, 117, 178
 " Specific Heat of, 117
 " What Ails the, 294
 Tropaeolum, Hybrid, 5
 Tropical Fruits, 49
 " Plants, Light for, 88
 True Gumbo, 336
 Tuberoses, American, 38
 Tuberosa, The, 4
 Tuberosus Begonias, as Bedders,
 109
 " Rooted Begonias, 2,
 72
 Tupelo Tree, Root of, 22
 Turnip, Beautiful, 209
 Typographical Errors, 281
- U**
- Upper Sandusky, Ohio, Oak
 Hill Cemetery, 69
 Utah Currant, 113
 " Pine Lumbar of, 182
 Utica, N. Y., Forest Grove
 Cemetery, 133
 Utilizing the Pine Tree, 212
- V**
- Vagaries of the Peach, 337
 Value of a Horticultural Pa-
 per, 28
 " of Cherry-Timber, 149
 " of Fast-growing Tim-
 ber, 148
 Variation in Cut-leaved Birch,
 of, 148
 Variegated Cobaea scandens,
 140, 233
 " Pelargonium, 174
 Varieties, New, by Grafting, 184
 " of Carnations, 363
 " of Catalpa, 312
 " of Fritula, 103
 Various Species of Ficus, 358
 Vegetable Plants, 94
 Vegetables, Drying, 146
 Vegetation Round Constanti-
 nople, 283
 " Secular Change, 183
 Vegetation and Reproductive
 Forces, 192
 Veitch, James & Sons' Cata-
 logue, 61
 Venus' Fly Trap, 332
 " Looking Glass, 103
 Verbena, Cultivation of, 105
 " venosa, 357
 Verbenas, Seedling, 140
 Vick's Illustrated Catalogue, 94
 " Monthly Ma-
 gazine, 62
 Victoria Lily, 331
 Vine, Cinnamon, 89
 " Disease from America, 14
 Vineries, Growing Grapes, 208
 Vines, 131
 " American in France, 112
 " for a Bay Window, 107
 " Window Hoods for, 325
 Virginia, Eucalyptus in, 147
 Virginian, Jasmine, 251
 Vitality of Seeds, 246
 Volume, Our Last, 28
- W**
- Wages of Insects, 22
 Walks, Asphalting, 294
 Wallflowers, 238
 " Chameleon, 233
 Washington, From Oregon, 187
 " Shade Trees of, 69
- Washington Tea Plants at, 210
 " Trees of, 69
 Watering Flower-beds, 259
 " Small Plants, 139
 " Strawberries, 240
 Water Lily, Native, Culture of, 5
 Waters of Death in Darlington-
 ia, 314
 Weather in New York, 52
 Weathersfield Elm, 342
 Weed, What is a, 344
 Weeping Blood-leaved Beech, 4
 West, Fears in the, 341
 " Plant Culture in the, 43
 " Catalpa Planting in, 366
 Whalenbergia tuberosa, 198
 What Ails the Trees, 294
 " Is a Fruit, 87
 " Is a Garden, 194
 Wheat and Chess Again, 344
 " Hybridizing, 373
 Wheelbarrow, a Lady's, 193
 White Lillium auratum, 262
 " Lobelias, 327
 " Wistarias, 263
 Whortle-berries, Cultivating,
 205
 Wild Cherry Leaf, Gall on, 186
 " Flowers, Royal Love for,
 347
 " Garden, Robinson's, 134
 Wilder, Marshall P., 63
 " Address of,
 30, 64, 95, 125
 " Peach, 339
 Willow Bark, 84
 " Oak, 113
 " Oak, Northern Range
 of, 148
 " Weeping, History of,
 119
 " New England, 154
 Window, Bay, Vines for, 107
 " Boxes and Jardine-
 ries, 265
 " Cabinets, Coal Oil
 Lamps for, 107
 " Culture, Foliage
 Plants for, 170
 " Garden, Drew's, 124
 " Hood for Ornamen-
 tal Vines, 325
 Wine, California, 48
 Winter Apples, 310
 " Carpet Bedding, 102
 " Decorations, 43
 " Decorative Plants, 74
 " Greeneries at Home, 348
 " Hardiness, Influence of
 Summer on, 338
 " Heliotrope, 102
 Wisconsin State Hort. Soc., 224
 Wistaria sinensis, Fruiting of,
 215
 " Seedling of,
 184
 Wistarias, White, 263
 Wood, Catalpa, 146
 " Lemon, 19
 " of Cerasus serotina, 114
 " Shittim, 29, 63
 " Tiles, Artificial, 330
 Woods, Birnam, 149
 Worcester Co., Mass., Horti-
 cultural Society, 94
 Worm on the Juniper, 70
- Y**
- Yellow and Black Locust, 149,
 210, 211,
 " Cottonwood, 241
 " Pine, 84
 Yellows, Laws Against the, 24
 Yucca Batata, 246



